A HISTORICAL AND CRITICAL REVIEW OF THE FACTORS AFFECTING THE DEVELOPMENT OF UNITED STATES PORTS AND THEIR RELATIONSHIP TO PUBLIC POLICY

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Submitted in partial fulfillment of
the requirements for the degree of

MASTER OF SCIENCE
IN
MANAGEMENT

United States Naval Postgraduate School
Monterey, California

1965

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MASTER OF SCIENCE

IN

MANAGEMENT

From the

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ABSTRACT

The development of the seaports of the United States has been a variegated undertaking, the result of local self interest. Both over development and under development exist due to competitive pressures between ports. Divergence in government, management, planning and service are evidenced by the various port authorities.

This paper seeks to identify the factors which have led to the development of ports: area, economic growth, and private and governmental bodies.

The general public and the nation have expended huge sums of money in the name of port development, which now runs into billions annually. Often little is done to ensure effective planning and investment in the interest of national objectives and public policy. Conflicts of authority and jurisdiction, coupled with questionable financial assistance practices are magnified in light of current requirements for expansion of port facilities.

Suggestions are made relative to improvement of organization, control, and government assistance programs by examining the control which port authorities have and how it suits the requirements for development.

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CHAPTER I

Introduction

Throughout the world and down through history, the great centers of population have been located on a navigable body of water. In many instances the confluence of peoples has been coincident with that of water. There have been and are some ports whose strategic locations have almost dictated world trade routes and entire economies. Some ports have been city-states; some, being virtually sovereign, have been a dominant force in the determination of international power positions. [6]

Alexandria, Carthage, and Constantinople in antiquity, Genoa, Venice, and the towns of the Hanseatic League in the Middle Ages, all exerted an influence far beyond inherent resources.

The rise of nations and diverse economies has given further but different and varying stimuli to the establishment and development of ports. Until the advent of the twentieth century, the trade and commerce of any region were in response to fairly well defined geographic and economic considerations. The gateways through which trade flows are the ports. The very word port is derived from the Latin "porta", meaning a gate or gateway. [8] The concept is still useful when considering

the great ocean ports which serve not only as gateways but as transshipment points moving people and cargoes to their destination.

Ports do not thrive merely because they are located on a seacoast, or within easy access of the sea by a fortunate site upon an estuary. Those which grow and prosper do so because of advantages which are lacking elsewhere. Among the more important are first, a good harbor, natural or one which can be improved, with opportunity for the construction of terminal facilities. The ideal harbor has a safe entrance of ample depth, adequate anchorages affording protection from perils of weather, and an approachable and extensive waterfront. Second, access to a productive and consuming hinterland. Where geographic and economic factors are in abundance, the effectiveness, prosperity, and growth of the port are multiplied. [11]

In certain times and at certain places there were ports which were complete import and export entities unto themselves. They consumed or transported all that was brought in. They fabricated or extracted all that was shipped out. Such was the case with the Phoenician cities of Byblos, Sidon, and Tyre, and the small island cultures of Crete and Rhodes. [14] This was true of pioneering undertakings and is witnessed still in developments such as exist at Bahrein; it is true in no small sense in Hong Kong today.

Yet most ports serve not only the city and the immediate area in which they are located, but tributary areas far beyond. The trade promotion material of most ports hammer at the theme of so many million customers within a so many mile radius. In the early stages of development of the now metropolitan areas of this country. the commercial interests of the major cities of the eastern seaboard went to extreme lengths to have connecting waterways and railroads open their trade frontiers to the hinterland. [1]

Due to topographical features extant in the United States, the inland movement of cargoes is long when compared with that of many countries and is likewise expensive. To compete with foreign commerce, all forms of transportation and handling of trade must be as efficient as possible. In earlier times when a ship carried only a small amount of cargo it could call at such a place as Essex, Connecticut, which only imported ivory for piano keys. Today this could not be done. [5]

Purpose

Today, the investment in their port by the trade interests and the general public of a port city runs into huge sume of private capital and public funds (see Appendix A). While not typical but certainly illustrative, it is estimated that the New York port provides approximately 430,000 jobs which support over

three million people - about one out of every four persons who live in the port district. [3] There can be no better way to express such an operation than as follows:

> The proper administration of this multi-million dollar utility business is a matter of paramount importance to the commercial life of the community and to the economy and security of the nation. [10]

The Problem And Its Background

National governments acting in the national interest have traditionally played an important role in the growth of ports. In the United States the role of the national government has been important, too, but largely limited to providing essential services and security and, most important to the ports, the dredging of main channels and harbor entrances providing access to the ports. There are several federal agencies whose activities are considerable in the development and operation of ports. Some of the more important are:

1. Department of Agriculture: Branch of Animal Industry, Board of Plant Quarantine.

2. Department of Commerce: Bureau of the Census, Bureau of International Commerce, Coast and Geodetic Survey, Federal Maritime Administration, Weather Bureau, and for national transportation policy under the purview of the Under Secretary for Transportation.

3. Department of Defense (Department of the Army): Corps of Engineers.

4. Department of Health, Education and Welfare: Public Health Service.

5. Department of Justice: Immigration and Naturalization Service.

6. Treasury Department: Customs Service, U.S. Coast Guard.

7. Interstate Commerce Commission.

The function of these agencies will be reviewed later in the study, but in general it can be stated:

> ...that in this country the federal government has assumed primary responsibility for the development of channels and harbors including the establishment of aids to navigation, the maintenance and administration of navigation, and the control of export and import traffic going to the ports. However, the federal government in the United States has avoided the assumption of responsibility for port control and development leaving this largely in the hands of local authorities ...[10]

Nevertheless, federal activity and interest in port development represents a long-established practice. The federal government long has desired to establish and maintain conditions favorable to commerce. Even in colonial times this was the case. Such were among the causative factors leading to the American Revolution. The assistance and services provided to ports

have been considered as a statement of legitimate involvement of the national resources.

In the early days of our nation there was some doubt that the federal government with its power to regulate also had the right to improve. Yet in its very first session, the Congress passed an act which provided for the future support and maintenance at federal expense of aids to navigation, public piers, and for rendering safe the navigation of bays, harbors, and ports. [18]

Federal grants of land, right of ways, and direct congressional appropriations for seacoast harbor improvements began in the early 19th century. As of 1948 the Corps of Engineers alone has spent well over a billion dollars in federal funds dredging ocean harbors and channels. [9] More than $7 billion has been spent in direct federal aid to navigation from 1917 to 1960. [21] These figures do not reflect the true costs. The services of the Corps of Engineers during peacetime have been considered on the basis of their being available at no extra cost. [16] This amount of money does not appear to be significant when weighing the multi-billion dollar budgets of today. But, the costs are increasing and they are only a part of the total expenditures for harbors and ports. Other federal agencies, local governments, and private individuals and corporations spend

many millions annually.

So far as can be determined there is no known objective in national economic policy by which the federal government plans expenditures of federal funds for port administration and development. It must be said, however, that there are criteria by which the Corps of Engineers evaluates proposed harbor work. This will be covered in the main study.

Federal policy has not been designed to achieve these aims. Mistakes have been made and repeated. Benefits from federal funds have been confined, to a large degree, to special interests and localities. [15]

In our country, as elsewhere, the growth and development of many ports can be attributable to local self-interest. There are examples of both under-development and over-development. What a port should be, how should it be administered and developed, how should it be operated? These questions have been answered with wide differences of opinion and practice by the several ports of the United States. This study will show that a port is really an undertaking whose functions and form are determined by what the local area's belief or hope it should be. Certainly, its purpose and use are important in the life of the area. In many cases it appears that it is looked on as a general government service.

The acceptance of the concept that the port is a service for all the people suggests that there is merit in considering unification of the facilities and in establishing a form of central control over the development of ports.

A survey of the various methods of administration in practice at the seaports of the country offers an interesting comparison of the different forms of government and control. There is much about which to think and reflect in observing the manner of growth and development, just as there is much to suggest some optimum system which would take in all that is good and discard all that is defective.

But there is no underlying and basic scheme of organization. Instead, there is a complex of individual cases with local peculiarities and characteristics. All systems of port government can be characterized as attempts to meet local needs and requirements.

Limitations

This study is neither an exhaustive survey nor comprehensive review of port administration throughout the country. The Corps of Engineers, Department of the Army, list in excess of 230 ports on the navigable waters of the United States for which tonnage figures are available. [13] The volume of interstate commerce shipped on the Great Lakes and inland

waters of the United States far exceeds that of foreign trade (see Appendix B). Cargoes on the Great Lakes are largely iron ore, coal, limestone, petroleum, and grain. The port of Two Harbors, Minnesota, in 1962 shipped more than four times the tonnage which moved through the port of San Francisco. Of the more than one billion tons of water-borne commerce of the United States in the same year approximately 68% was domestic trade.[13] As can be seen from these few examples a complete survey would be staggering. Therefore, this study will be limited to some of the major seaports of the United States.

There is no intention of presenting a systematic analysis of port routine. There are many sources which fully describe and explain the transactions of commerce, the procedures of importation, exportation, and customs routine, as well as shipping regulation and trade documentation. What is attempted is to give a broad view of the methods which are practiced in the conduct of port affairs.

The suggestions of Mr. Paul A. Amundsen, Executive Director of the American Association of Port Authorities, who is also the publisher and editor of its official monthly periodical, World Ports and Marine News, and of Mr. Rae B. Watts, Port Director, San Francisco Port Authority, has led

to a review of references providing a broader base and scope than originally planned.

It is difficult to look at port administration and development separately from the other aspects in the subjects of trade and transportation. However, for purposes of this study the attempt will be made. Consideration of the relationship of interface will come only where it cannot be avoided and where it is pertinent.

Summary

The problems, then, are these: Are federal and local governments sure of the scope and responsibility of what their action in port development should be? What definitions of policy and what revisions of practice are necessary to ensure endeavors are in the national interest and in support of public policy?

CHAPTER II

THE ECONOMIC GEOGRAPHY OF U.S. PORTS - HISTORICAL

THE ATLANTIC PORTS

When viewed in a wide perspective, the North Atlantic coast of the United States, from Maine to Virginia, is one of the most concentrated shipping areas of the world. Only the area from Hamburg to the River Seine and including England is greater.

The coast between Boston and Baltimore is the ocean-front of the American Manufacturing Belt. Boston has more and more moved into the traffic shadow of New York for general cargo and passengers, whereas Philadelphia and Baltimore have established keen competition with New York, favored by rail rate differentials, by shorter distance to most points in the Middle West, and by a less crowded water-front which has allowed success through the establishment of heavy, bulk cargo consuming industries, primarily petroleum, ore and grain. Only the stretch of coast between Amsterdam and Dunkerque can show such a concentration of seaborne

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[1]The material for this chapter was largely taken and adapted from four sources: Robert Greenhalgh Albion, The Rise of New York Port (Hamden, Conneticut: Archon Books 1961); Gunnar Alexandersson and Goran Norsrom, World Shipping (New York: John Wiley & Sons, 1963) Helen Delich Bentley (ed.), Ports of the Americas (Washington: The American Association of Port Authorities, 1961); Benjamin Chinitz, Freight and the Metropolis (Cambridge, Massachusetts: Harvard University Press, 1960).

traffic as the 200 miles separating New York and Baltimore. Together the ports of New York, the Delaware River and Baltimore handle about 200 million tons of cargo, of which 100 million tons are in foreign trade.

THE NEW ENGLAND PORTS

Greater Boston of today includes three ports associated with the American trade with the Far East during the heyday of American shipping during the last century: Salem, Beverly and Boston. These and several other New England ports are great names in the history of American shipping. For more than two centuries New England looked to the sea for much of its economic activity--fishing, whaling, shipping and shipbuilding. In this there has been a great change in the last hundred and fifty years, however. From the beginning of the nineteenth century New England, especially its southern and coastal parts, went through a period of rapid industrialization based on the water resources and the region, later supplemented by coastwise received coal and, still later, petroleum.

The New England industry works for the American market as a whole. Exported products are of high value shipped in small amounts to any one destination. For this type of cargo New York with its many sailings and unequalled services has become the natural gateway. New England is part of the

New York hinterland for general cargo and passengers. In 1928 an extensive survey indicated that 65 per cent of New England's exports were shipped through New York and only 14 per cent through Boston. Twenty years later another study corroborated the earlier results: 81 per cent of the interviewed manufacturers shipped through New York and only 12 per cent by way of Boston. Now, New England ports have been relegated to the role of handling bulk cargo only, mostly incoming petroleum products, coal, gypsum, etc.

Boston long retained the function of the leading American wool market. Now wool imports are routed through several ports. In 1956 New York imported somewhat more wool than Boston, which was rather closely followed by Philadelphia, Hampton Roads and Charleston. Boston is, however, still the leading leather market handling the largest imports of hides in the United States.

Portland, Maine, which served for 70 years after 1853 as a winter port for Montreal before the railroads to Halifax and St. John were completed and Canadian traffic was rerouted with the help of tariffs, has regained its earlier function as a short cut to the Canadian heartland with the construction during World War II of pipelines to Montreal. A tanker depositing its cargo at Portland saves 2,000 miles per round trip.

NEW YORK

The world's busiest harbor and premier port is in a class by itself and is so treated here. The influence which New York has had on the ports of the eastern seaboard of the United States and of the world has been immense. In all aspects of commerce, tonnage, trade, facilities, and spirit, New York has an absolute advantage over any other single port in the world.

New York's share of the United States foreign trade by value increased from 6 per cent in 1790 to 37 per cent in 1830 and no less than 57 per cent in 1870. Since then the proportion has been decreasing but in spite of an almost century-long relative decline New York at the end of the 1950s handled 38 per cent of the United States oceanborne foreign trade. The story of New York's rapid rise to foreign trade dominance in the early part of last century is also the story of the city becoming the undisputed economic capital of the nation, and, in recent decades, of the world.

In colonial America foreign trade was channeled through many seaports, each little ports serving only its immediate surroundings. In the southern colonies this area was often just a plantation on a river and the port a simple wharf at which occasional British ships discharged products from the

home country and took on big tobacco hogsheads containing the main cash crop of the area. This pattern persisted even after the United States had been formed. The new nation, which had 5.3 million inhabitants at the beginning of the nineteenth century, much less than the 27.3 million of France and the 11.9 million of Great Britain, was concentrated on the Atlantic coast although settlers had begun to pour over the Appalachians and down the Ohio Valley.

The remarkable concentration of foreign trade to New York and a few other ports during the first half of last century was made possible by developing hinterlands and radical improvements of inland transportation: Canals, surfaced roads and, after 1830, railroads. The increasing size of ships also favored port concentration as did a number of commercial innovations. Today the frequency of sailings on regular lines is probably its most important selling point.

When the cost of inland transport had been reduced sufficiently, much could be gained by bringing buyers of foreign products together at one point. The buyers would come from all over the United States to choose from a wide assortment. The gathering of merchants and goods could obviously not be duplicated at several ports. Most American producers and purchasers found it convenient to use the services of specialized

middlemen, the foreign-trade merchants, for whom the port was the natural location. Before the first successful trans-atlantic cable was completed in 1866 it was imperative for the foreign trade merchant to be in close contact with the coming and going of ships to be informed on the world market situation. Foreign trade was more complex than domestic trade and the foreign trade merchants more in need of specialized services, such as those provided by banks and insurance companies, which therefore also tended to concentrate in the port city.

A large number of factors, of which only a few of the most important have been listed, thus favored a concentration of foreign trade to a national gateway on the Atlantic coast. But why New York and not some other port?

The splendid harbor of New York compared favorably with the good harbors of Boston, Philadelphia, and Baltimore. For the dominating trade with Europe Boston and New York had the advantage of being located on the sea whereas Philadelphia and Baltimore were far upstream on south-facing estuaries. Boston had the advantage of being closer to Europe than New York but it was eccentric to the developing areas of the continent. New York ranked as the number one port in the nation already by 1800 thanks to a densely populated hinterland. It was followed by Philadelphia, Boston, and Baltimore.

The aggressive merchants of New York were more successful than their competitors in capturing the cotton trade. More and more southern planters channeled their cotton exports through New York, and in this trade New York was favored by the configuration of the coastline. The invention of the cotton gin in 1793 made cotton overwhelmingly the leading United States export, far exceeding such traditional exports as tobacco and wheat flour even as early as 1820.

Physical geography favored New York over its competitors also in relation to the trans-Appalachian world, which was becoming increasingly important in the early part of last century. The Erie Canal, opened to traffic in 1825. It connected Lake Erie with the Hudson River and slashed the Buffalo to New York freight rate from 100 to 6 dollars per ton. For decades this canal made a tremendous impact on the flow of cargo and passengers and probably was the single most important factor in establishing New York as the nation's principal gateway for foreign trade and immigration. When major railroads were completed to Chicago and other points in the Middle West 20 years later they chose New York and points south of it as their Atlantic terminals, but primarily New York. Boston was too far away; Baltimore and

Philadelphia were somewhat closer to the Middle West but New York, thanks to its canal, already had a heavy flow of freight and passengers and it was far superior in port services and its connections with Europe.

After the Civil War the foreign trade passing through New York continued to increase rapidly--but less rapidly than the total foreign trade of the United States. All other major seaports except Boston have been gaining on New York. American foreign trade is no longer overwhelmingly with Europe but has a more global distribution, which means that shipment via New York will mean a detour. Bulk cargo is playing a greater role in foreign trade and bulk cargo follows the route that will minimize land transportation.

New York's relative decline as a port especially since the 1920s remains a fact. Measured by the tonnage of its total cargo turnover, New York has grown more slowly than most of the large world ports. The location at the mouth of the Hudson River was a great asset when New York gained its dominance but in this century it has posed serious problems. New York does not have plenty of unoccupied flat land downstream for the construction of large oil refineries, steel mills and other heavy manufacturing plants which has been characteristic of Philadelphia, Baltimore, New Orleans, and Houston.

This means that the traffic in bulk cargo has increased only slowly.

The freight structure on the American railroads has worked against New York as a bulk handling port. In 1877 the main east-west railroads, the trunk-lines, agreed on differential rates for freight between Midwest points and the large ports on the Atlantic seaboard. At the time of the agreement, grain constituted over 70 per cent of the total tonnage carried by the trunk-lines to the principal Atlantic ports. Rates to Baltimore were made 3 cents per hundred pounds and those to Philadelphia 2 cents lower than the New York rates; rates to Boston should at no time be less than those to New York. The rail differentials were originally intended to offset the lower ocean freight rates charged at New York as compared to other North Atlantic ports. But for some decades now the ocean carriers have observed a single rate to Atlantic coast ports;i.e.,to ship a commodity from Hamburg to Charleston costs the same as from Hamburg to Boston, and New York has been at a disadvantage in handling bulk cargo to and from inland points. The 1963 Supreme Court decision in favor of equalization of rail rates between the Midwest and North Atlantic ports improved New York's competitive position by eliminating what the Port Authority long had described as "archaic railroad rates".

The general cargo traffic which traditionally is handled at piers in Manhattan and Brooklyn is handicapped by these piers being on the wrong side of the river. The lower New Jersey waterfront would have been the logical site of a general cargo port serving a huge hinterland to the west of the river had it not been pre-empted by the railroad terminals. When these terminals were built last century the general layout of the New York port complex, which had grown without any coordinating plan, had certain obvious advantages. Cargo was transferred between piers and railroad terminals by lighters or rail-carfloats. This system allowed great flexibility; freight could be transferred between any rail terminal on the New Jersey side and any pier on the New York side without switching the railcars. But the terminal costs to the railroads were higher than at other ports due to the movements required from the piers in New York to the rail terminals in New Jersey.

In recent decades trucks have played an increasing role both for the transfer of cargo between rail terminal and pier, for which purpose the Holland Tunnel is used, and for shipments directly between the foreign trade pier and inland points. In the late 1950s most of the general cargo of the New York hinterland was handled by truck. And the typical piers were not built to accomodate trucks. They were

designed to save space on land, not to speed up the transfer of goods between truck and vessel. As a result of the delays to the truckers, from time to time they imposed additional charges for pickup and delivery on the New York piers.

The problems caused by congestion and high terminal costs prompted a special study by a bi-state commission during World War I. The commission recommended for formation of the Port of New York Authority. It was created in 1921 by treaty between the states of New York and New Jersey with the dual task of promoting commerce and developing transportation and terminal facilities. It has played a prominent part since that time in the construction of the major bridges and tunnels to improve road access between Manhattan and the peripheral parts of the port, and only since 1944 has it grown into a real waterfront operator.

New York's share of the nation's ocean-borne general cargo probably will continue to decline in spite of the remarkable modernization program for terminals and highways which will allow faster and cheaper transit for hinterland cargo. Several trends combine to bring about a continued decline. The construction and modernization of general cargo terminals at many ports along the Atlantic and Gulf coasts and on the Great Lakes by state and municipal authorities provide the

physical equipment for a dispersion of general cargo traffic. The increased use of trucks for transport between inland points and piers will favor the nearest port, as truck rates increase faster with distance than rail rates. General cargo is overwhelmingly carried by liners and keen competition prompts the liners to call at more ports in spite of increasing vessel size. All over the world the liner space offered is increasing faster than the tonnage of cargo handled.

Even if New York's share of the United States ocean-borne foreign trade continues to decline its hinterland will still include most of the nation east of the Rocky Mountains, and for transatlantic passengers most of North America. For high-value general cargo competition may come from the air carriers rather than from the competing ports. The only American port whose hinterland approaches New York's in size is New Orleans'. The two share much of the same area and the overseas destination or origin is the determining factor. Baltimore has a smaller hinterland and Philadelphia's is still more restricted. New York probably will continue to be the first port of call for most incoming vessels and the last port of call for outgoing ships. Combined with an edge over other ports in number of sailings and unequalled foreign trade services this will help New York compete for high-value general cargo

which pays a premium for speed.

Although the total tonnage of goods has been more evenly distributed between several major seaports some services remain concentrated to New York. For example, New York still accounts for the bulk of foreign trade financing and New York foreign trade merchants negotiate much trade that is routed through other ports.

THE DELAWARE RIVER PORTS

The Delaware River provides a deep waterway 135 miles long from the sea to the head of navigation at Trenton, New Jersey. Dredging operations above Philadelphia completed in 1964 set the depth of the river channel at 40 feet all the way to Fairless, Pennsylvania. Since 1952 a Delaware River Port Authority has been active with mainly promotional tasks. It operates two bridges across the river at Philadelphia but does not own or operate any port facilities. Philadelphia, located 100 miles from the sea, is the main port. Upstream and downstream from the general cargo piers of downtown Philadelphia are many large manufacturing plants with their own piers, most of them located within the urbanized area. The Delaware River is pre-eminently a bulk handling port. In tonnage of foreign trade it is the largest port in the United States, handling 44 million tons in 1960 of which 94% were imports. No less

than 62 per cent of the import tonnage was petroleum and 30 per cent ores.

The many large oil refineries on the Delaware River (At Delaware City, Claymont, Marcus Hook, Paulsboro, Westville and Philadelphia) import more crude petroleum than all other ports of the United States combined. Imports of petroleum to the Delaware River ports have grown faster than total oil receipt which reflects an increased reliance on imported petroleum since the end of the 1940s. But also the ore imports have increased substantially. As a result the total imports of the Delaware River ports grew from 12 million tons in 1948 to over 40 million in 1961.

Chemical manufacturing is another major industry of the area. Brandywine Creek, a tributary of the Christine River which flows into the Delaware at Wilmington, long has been prominent in chemical history. It was here that the French emigrant family Du Pont in 1802 started a powder mill. The headquarters and the main experimental station of the Du Pont Company still remain at Wilmington. Several other large chemical companies are sited along the riverfront of the Delaware.

With the establishment of the United States Steel Corporation's integrated mill at Fairless the imports of iron

ore, mainly from Venezuela, have increased. Prior to the dredging operations mentioned above, the deeply laden ore ships from Venezuela, could not negotiate the channel. Large quantities of ore are also handled at Philadelphia for steel plants in eastern Pennsylvania and further inland. In addition to iron ore sizable quantities of alloy metals are received, primarily manganese and chrome. About one million tons of sugar are handled at the piers of two large sugar refineries.

The Delaware River has been known for its shipbuilding activities since colonial times. The world's first nuclear powered merchant ship, the N.S. Savannah, was built at Camden. Another two large shipyards are located in greater Philadelphia. Like other American shipbuilding centers Philadelphia has depended on Navy contracts and the construction of heavily subsidized merchant ships for the survival of this time-honored industry.

BALTIMORE

Baltimore by the end of the eighteenth century had become one of the leading American ports. It had locational advantages for the West Indian and South American trade. Like New York and Philadelphia it had large exports of wheat flour. Until the Civil War Baltimore's flour exports were second only to those of New York, a position held by virtue of Baltimore's trade with

South America, primarily Brazil. Chilean copper was an important return cargo from South America's west coast until the 1869 Copper Act stopped most of this trade. Baltimore still is an important milling center and a large grain shipping port. It is also one of the chief copper refining centers in the world.

The fertilizer industry had its beginning in the guano trade, in which Baltimore was prominent already in the 1850s, when Peruvian guano was the leading import from the west coast of South America. In the 1930s Baltimore had become the largest non-commercial fertilizer center in the world.

The most important traffic generator in the port of Baltimore is, however, the steel industry. The Bethlehem Steel plant at Sparrows Point receives large quantities of alloy ores as well as iron ores and ships steel products. But Baltimore is also a receiving and shipping port for inland steel works. For this traffic Baltimore's traditional freight differential was an advantage.

Baltimore is located 170 miles from the ocean. An attempt to overcome the disadvantage of Baltimore's distance from the sea for the trade with American ports to the north and with Europe was accomplished in 1829 when a 10-foot locked canal, the Chesapeake and Delaware Canal, was completed. The

Federal Government acquired this private canal and in the 1930s improved it to a 27-foot sealevel waterway which after 1954 was deepened to 35 feet. The canal cuts a day off the sailing time between Baltimore and ports to the north.

Being far from the sea in Baltimore's case means being close to the interior. As can be seen from a map Baltimore is closer than New York and Philadelphia to most points in the Middle West. The agreement between the trunk railroads in 1877, mentioned in the New York section, gave Baltimore an advantage over her competitors in New York and Philadelphia, which laster until the Supreme Court decision in 1963, almost 90 years later.

Baltimore is the only Atlantic port whose general cargo hinterland stretches far enough inland to be a serious competitor of New York and New Orleans in the Middle West.

PORTS OF HAMPTON ROADS

Lying at the mouth of the James River, at the lower part of Chesapeake Bay near where it empties into the Atlantic Ocean, lies the harbor of Hampton Roads. Considered as the finest Atlantic harbor of the Americas, except for New York and Rio de Janeiro, the urbanized area of Hampton Roads-Norfolk, Portsmouth, and Newport News - has remained small, at least in comparison with Boston, New York, Philadelphia, and Baltimore. This must chiefly be explained by the

great differences in historic background between the northern and southern colonies and the contrasting economies that developed in the northern and southern states.

Hampton Roads has long played a role as an ocean gateway of North Carolina, Virginia, and West Virginia but became a large port when it was made the ocean outlet of the Pocahontas coal field. The coal burning steamers which came to Norfolk could fill their bunkers while loading the cheap coal for cargo. This gave Norfolk an advantage over ships calling at other Atlantic ports which might have to make a deviation for fuel. Thanks to favorable geological conditions which permit open pit mining and a high degree of mechanization and thanks also to an efficient means of transport, American coal competes successfully in a shrinking world market. Most of our coal exports have been shipped from Hampton Roads, making this port one of the chief hubs on the world map of oceanborne dry cargo.

CHARLESTON

Charleston follows Hampton Roads with the finest harbor on our southern Atlantic seaboard. An important port even during colonial days, Charleston was the largest city in the South. Carolina exports to the mother country reached a peak in the decade before the Revolutionary War.

In 1768 the whole export commerce to Great Britain of all the colonies in continental America was valued at about one and one-quarter pounds sterling. Carolina's exports was over one-half million pounds sterling, or about 40% of the entire export trade to Great Britain. During most of the colonial period, exports shipped through Charleston were worth more than the combined exports of New England, New York and Pennsylvania.

At the beginning of last century when the Gulf coast and Florida became parts of the United States, New Orleans and Mobile soon overtook the Atlantic ports as gateways of the rapidly expanding cotton belt, although the invention of the cotton gin saw the textile plants of the North and of England seek their supply from Charleston as well.

After the Civil War the southern ports became historic monuments of bygone days until they have recently seen a renaissance with the expansion of the southern forest industries and the South's expansive economy in general. Today, Charleston ranks above all other ports of the Atlantic Southeast in value of export-import trade, although Florida tops the tonnage list. [1]

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[1]Foreign Trade Division and International Trade Analysis Division, U.S. Department of Commerce.

OTHER ATLANTIC PORTS

The ports south of Hampton Roads fall into two groups. In the first are those north of Jacksonville, Florida, which serve the forest industries, the manufacturing areas of the American Piedmont, and the agricultural hinterland which uses great quantities of fertilizers. The second group of ports are those serving southeastern Florida where the subtropical climate is the chief factor of the economy and exportable products are few. Some sugar products are imported and there is a growing trade with the Bahamas.

Belonging really to neither group is Jacksonville whose rail and highway connections make it one of the major trade and transportation centers of the Southeast. The principal products passing through the port are petroleum, fertilizers, gypsum, lumber, and naval stores.

THE GULF COAST

MOBILE

Before the Civil War, Mobile was one of the leading American ports. It was dominated by the cotton exports and cotton was overwhelmingly the leading item on the American export list. The port was second only to New Orleans in cotton shipments which reached an all time peak in 1860 with 800,000 bales.

For many years after the war Mobile lay dormant like Charleston, and cotton shipments fluctuated around 300,000 bales a year. A new phase in Mobile's history began at the end of last century with the lumber industry, which had migrated from the cutover forests of the East to the Great Lakes and, somewhat later, to the South.

Mobile also began to ship out iron and steel products from the rapidly developing Birmingham district. The United States Steel Corporation, which after 1907 dominated Birmingham, supplied their West Coast customers primarily from their Alabama mills, whereas the second largest steel concern, the Bethlehem Steel Company, shipped from their tidewater plant at Sparrows Point, Baltimore. The improvements of the Warrior River since 1920 has provided barge connection with Birmingham to aid this trade. In the 1950s this has developed into a two-way traffic with imported iron ore and alloy ores moving to Birmingham and steel products moving downstream. From 1936 Mobile has also had increasing imports of bauxite.

NEW ORLEANS

Historically, the western Gulf Coast was important on the map of the world trade even before the discovery of oil about the turn of the century. Shipping was largely confined

to New Orleans on the Mississippi River as the natural traffic artery to the rich agricultural regions of the Middle West. New Orleans was already a trade center during French and Spanish colonial times. Following the Louisiana Purchase in 1803 and the rise of steamboat traffic New Orleans grew rapidly and for several decades ranked as the fifth largest city in the United States, surpassed only by New York, Baltimore, Boston, and Philadelphia, before the Civil War.

But the southward flow of the Mississippi River was a drawback, too, as the Atlantic seaboard and Europe were the important trade outlets of the Middle West. United States foreign trade was primarily with Europe a hundred years ago. It has since gradually become more global in distribution, favoring the Gulf Coast which has time and distance advantages over North Atlantic ports in the trade between the central Middle West and Latin America and much of the Far East. The Erie Canal was a serious competitor of the Mississippi from 1825.

New Orleans, like New York, acquired good railroad connections with the Middle West. By the 1870s the east-west railroads had taken over most of the cargo between the Middle West and the Atlantic seaboard. Railroads and trucks now are the chief carriers of general cargo between the port and

its wide hinterland, which in extent is only surpassed by that of New York. Two commodities imported in large quantities at New Orleans, bananas and coffee, reach northeastward into western Pennsylvania and western New York state and into the northern Great Plains.

The port of New Orleans comprises both banks of the Mississippi from the mouth of the river to a point about 125 miles upstream. It lies at the pivot of the South's inland waterway system, the meeting point of the Mississippi River and the Gulf Intracoastal Waterway. Bulk cargo, primarily petroleum products, also makes up much of the traffic in New Orleans, which is one of the chief gateways to the interior of the North American continent, ranking second only to New York in the value of its foreign trade. In 1964, the port topped $2 billion in total foreign trade based on the trade statistics collected by the U. S. Department of Commerce (See Appendix A.). Petroleum, sulphur, sea shells, sugar, steel products, soybeans, corn and wheat account for the largest tonnages. It has the largest import of bananas, sugar and sisal of the country and stands second in coffee.

GALVESTON

The oldest deep-water port on the Texas coast is Galveston which has been in service for ocean shipping since 1839.

The real economic development of the port began in 1889 when the pleas and demands of the southwestern producers of grain, livestock, cotton, and petroleum received recognition by the federal government. They wanted and needed a deepwater port nearer the producing areas, New Orleans being the outport prior to this. Now, Galveston along with Houston are the major outlets to the Carribean, South America and Europe for the expanding Southwest.

Few, if any, of the major ports in the world are more specialized on dry cargo; petroleum products make up less than two per cent of the total port traffic. The chief commodities handled in Galveston are sulphur, grain, cotton, and sugar. Galveston is the world's largest sulphur shipping port. Much sulphur is shipped in molten form to sulphuric acid plants located close to the market. Terminals to receive molten sulphur have been built in Europe. In many years Galveston ships more wheat than any other port in the United States.

HOUSTON

Everywhere in the Gulf South port development has depended more on community initiative and drive than on natural advantages. The completion of the Houston Ship Channel in 1915 created the modern port of Houston. The port comprises the 25 mile long channel from Galveston Bay to the Turning

Basin in Houston, and 50 miles from the Gulf. Today, there is close to $3 billion of capital investment in industry along the Channel. This huge sum is represented by a complex of plants than run the gamut from refinery to cement plant, from steel mill to paper mill. Aero-Space has jumped in, too. National Aeronautics and Space Agency operations in the Houston area have led to the development of a $13.4 million port complex adjacent to the Manned Spacecraft Center.

By value, domestic trade and foreign trade are of roughly equal importance; exports in both cases represent twice the value of imports. Fuel oil and gasoline account for almost five-sevenths of the value of domestic shipments. Tubular products made up one third of domestic receipts followed by automobiles and parts. The export list is more diversified with oil field equipment, cotton, wheat, and sorghum at the top. Coffee is the leading import item.

Houston, one of the fastest growing cities in the United States, now is the largest city in the South. As the undisputed metropolis of the Gulf Coast petroleum region, it has expanded with the growth of petroleum production in this area. The diversity of Houston's port traffic is characteristic of any metropolitan port.

Taken together, Houston-Galveston are rather serious

competitors of New Orleans, partly competing in the same trading area, but having distance advantages in the western part of the Middle West, from where several railroads focus on these ports.

OTHER GULF COAST PORTS

Most of the deep-water ocean ports of the Gulf are largely man-made. The thousand mile Gulf Intracoastal Waterway from Apalachicola Bay in Western Florida to the Mexican Border connects most of the ports on the Gulf to the Mississippi River waterway system.

Many factories, removed from existing builtup areas, line the deep channels. Large plants commonly stand in the center of vast tracts of company-owned land. The industrial landscape developing on the Gulf Coast differs strikingly from the congested factory districts of the older manufacturing centers. The expansion has been particularly marked in petroleum refining and in heavy chemical manufacturing.

The deep water channels, dredged at high cost for the large tanker traffic, can of course also be utilized by dry cargo ships. The additional costs are limited to those of building quays, warehouses, etc., or costs that would be incurred in any natural harbor. Ports developing general cargo traffic as a "parasite" on oil traffic may eventually become

important general cargo ports which they would never have been had the oil traffic not been there first.

Any listing of other Gulf Coast ports would include many which will only be mentioned here. They would include Lake Charles (petroleum, chemicals, and rice exports); Port Arthur - Beaumont - Orange (petroleum and grain); Freeport (petroleum and chemicals); Corpus Christi (petroleum, bauxite and non-ferrous ores); Brownsville (petroleum, cotton, agricultural products). Only Tampa, well to the east of the Texas ports, breaks the near monopoly which petroleum has over her western sisters. Her export giant is phosphate from the richest deposits in the world; her imports are general.

THE PACIFIC COAST

GENERAL

The Pacific coast of the United States is one of the most recently settled coastal areas in the world. The first great influx of people came with the discovery of gold near Sacramento in 1848 which led to the famous gold rush. San Francisco became the port of entry for gold-seekers arriving by sea and it soon developed into a trade and financial center not only for the gold fields but also for much of the American West.

The ports of the Pacific are separated from the economic

heartland of the nation by vast areas of semiarid or mountainous country. But, the transcontinental railroads, completed in the period 1870-1910, helped to bridge this wide gap. One of the outstanding events in economic history, common to all Pacific ports, was the opening of the Panama Canal in 1914. It offered cheap waterway, bringing San Francisco and New York 7,800 nautical miles closer than by the Strait of Megellan route. It also had its effects on the railroad rates.

The long distances from the main centers of production gave a measure of protection from eastern competition for companies working a regional market. Now, national manufacturers often open branch plants on the Pacific coast to save on transportation costs. This has benefited all large cities on the Pacific, but expecially San Francisco and Los Angeles.

The Pacific ports fulfill similar functions as gateways to Hawaii and the Orient for passengers and express cargo as the Atlantic ports do as gateways to Europe. Any map of American port hinterlands will show large areas of influence for the leading Pacific ports. But except for some alluvial plains near the coast and scattered irrigated districts in the interior the population densities are still very low in the West. Half the population in four southwestern states live in either the Los Angeles or the San Francisco urbanized area. Greater

Los Angeles alone accounts for about half the manufacturing in these four states.

For ease of developing the theme, the geographical order followed in this chapter will be varried. San Francisco will be treated first, there will be a statement of transition and contrast, then Los Angeles will be covered.

SAN FRANCISCO BAY

For many decades San Francisco was the undisputed leader among the ports on the American Pacific coast. Its immediate hinterland, the Central Valley formed by the San Josquin and Sacramento Rivers between the Sierra Nevada and the Coastal Ranges, became a grain producing area making San Francisco one of the world's important wheat and barley ports in the period 1870-1890. The transcontinental railroads, constructed in the last decades of the nineteenth century, opened the large eastern markets for fruit and vegetables from California. With the help of irrigation it became possible to make full use of California's greatest natural resources, its Mediterranean climate. The Central Valley, has become a densely settled agricultural region. The ports of the San Francisco Bay area are the natural gateway for most of this region.

The opening of the Panama Canal swelled the trade of the

city. By the start of World War II the whole San Francisco Bay area was heavily industrialized, and it had become the commercial center of the West Coast. Though the aggregate of ports on the Bay-San Francisco, Oakland (including Alameda), Richmond, and Redwood City - lost out in total tonnage to their southern competitors of Los Angeles and Long Beach some years ago, the general cargo volume handled at San Francisco and Oakland still remains among the highest among the Pacific Coast ports.

The San Francisco Port Authority is the oldest such "authority" in the United States, having been created by an act of the California Legislature in 1863. The basic accomplishment of the early Authority was the enclosing of some 800 acres from the water of the Bay, of what is now the northeast section of the city. This area contains more than half of the piers of the port and has been a splendid source of revenue to the Port Authority which has never taken any tax money for construction or operation in its 102 years.

Rail traffic, which was formerly lightered across the Bay to San Francisco now normally services the facilities at Oakland. Trucks, using the excellent network of bridges in the area (somewhat similar to New York), and the manufacturing and processing industries on the west side of the Bay maintain San

Francisco as the harbor leader in port traffic. Richmond exceeds the others in tonnage but this is predomonantly petroleum shipments received for the refinery complex located there which serves the entire area. Further down the Bay at Redwood City, large cargoes of petroleum products and salt are shipped.

The population of metropolitan Los Angeles surpassed that of Greater San Francisco in the early 1920s and now southern California is by far the most populous part of the most populous state. Greater Los Angeles is more than twice as large as Greater San Francisco. Their historical background is quite different, however. San Francisco is a real port city that became a metropolis because of its location on one of the world's finest natural harbors guarding the entrance to the gold fields and to a rich agricultural region. Its downtown district is in close contact with the port. Los Angeles, on the other hand, is an inland metropolis that built a harbor to take advantage of the new Panama Canal. When Los Angeles needed a modern port it incorporated San Pedro, and a narrow strip of land leading to the port in 1909, and then constructed a completely man-made harbor.

LOS ANGELES

Los Angeles is the world's fastest growing metropolis. It

was little influenced by the influx of people during the Gold Rush and at the census of 1880 it had only 11,000 people. Now the urbanized area of Los Angeles is the third largest city in the United States.

A series of booms have been influential in Los Angeles' short history. The completion of two competing transcontinental railroads and introduction of refrigerated cars started a citrus boom in the 1880s. The discovery of oil fields in 1899 started another boom which was strengthened by the opening of the Panama Canal in 1914 and the construction of the modern harbor. In 1925 no less than 70 per cent of the 12 million tons passing through the Canal originated at or was destined for the Los Angeles area. The movie boom, the aircraft boom, and now the electronics and space boom continues the expansion of the city as does the branch plant boom of industrial concerns.

But in the early days there was little to portend of what was to come. This was no less true of the port. Nature had provided little in the way of a harbor. The roadstead of San Pedro had no structures beyond a single warehouse. Cargoes were often manhandled and waded to lighters which carried on a shuttle to ships at anchor.

Just prior to the Civil War, the Army developed the harbor sufficiently to make it the principal landing point of military

supplies used in the West during the Civil and Indian Wars. Continued use by the Army brought about the construction of a railroad from Los Angeles to the coast.

Commercial interests of the city pressed for and won their southern California seaport. The port of Los Angeles grew in tonnage handled to where in 1923 her total exceeded that of any other Pacific Coast port; and, in the more than four decades since, that leadership has never been lost.

But, the rapid expansion of the population and the economy in recent decades has not been reflected by an increased cargo turnover in the port. In the 1950s the cargo turnover was the same as in the late 1920s or about 24-26 million tons a year. The importance of petroleum in the total tonnage had slightly increased and was about 20 million tons, of which over 3 million were bunkers. The direction and composition of the petroleum movements has changed considerably, however. In 1961 Los Angeles was a net importer of petroleum, receiving 3.6 million tons from abroad and shipping 1.8 million tons. Domestic movements along the Pacific coast accounted for 8 million tons, of which 5 million tons were shipped from Los Angeles. Intercoastal shipments, which were of great importance in the 1920s, amounted to less than one million tons in 1961. Lumber receipts from the Pacific Northwest declined to about one-third. The

general cargo turnover was about the same in the late 1950s as in the late 1920s or approximately 4 million tons. The composition had changed, however; 25 per cent of the dry cargo traffic was in foreign trade in the 1920s, while in the late 1950s the proportion had increased to 75 per cent.

Like San Francisco to the north, Los Angeles has competition from its immediate neighbor. The city of Long Beach, which with some forty other corporate cities is part of Greater Los Angeles, invested its oil profits in a modern harbor alongside the Los Angeles harbor. Huge development programs along the waterfront drew the Navy and industry to the facilities of the port during the 30s. Though handling about one-fourth of the tonnage of Los Angeles, the port of Long Beach adds much to the area.

PORTLAND

Portland's position at a natural crossroads, the junction of the north-south route from California to Puget Sound and the only water-level passage from the Columbia basin to the coast, has made it the trade center and the port of the fertile Willamette Valley, one of the richest agricultural regions of the West. It is the oldest city of the Northwest and throughout last century it was also the largest city but it is now surpassed in population by Seattle.

Early growth was based primarily upon forest resources and these still are of major importance. Grain and lumber are leading commodities shipped from the port which includes facilities located in the suburb of Vancouver, Washington. Since the end of last century the lower Columbia has been greatly improved for navigation; the channel is now 35 feet deep. In comparison with the Puget Sound ports Portland has a more hazardous entrance from the ocean but it has also the advantage of an inland waterway system which brings wheat, paper, lumber, and crushed stone downstream and sends petroleum products in the opposite direction. Barge traffic on the Columbia River is increasing considerably. Through it all Portland tops other U.S. Pacific ports in dry cargo volume, from all sources.

SEATTLE

After nearly half a century of moderate growth as a muddy sawmill and lumber shipping town Seattle had a boom period between 1898 and 1910 as a result of the Klondike gold rush. Seattle became the port and outfitting center and it still remains the continental gateway for seaborne trade with Alaska.

In 1896 a Japanese steamship line, in conjunction with one of the transcontinental railroads, established the first direct service between Seattle and the Orient. In steaming time

Seattle is two days closer to the Orient than San Francisco and Los Angeles and this was of special importance for high value cargo in the days before air freight. Seattle became the chief American gateway for the imports of raw silk from Yokohama -- one of the leading commodities on the American list of imports in the 1920s. Fast trains carried it to the silk manufacturing centers in the New York region. For raw silk, New York was then in the hinterland of Seattle. World War II and the Korean War were busy periods for Seattle through which military personnel and supplies were sent in large quantities. Seattle offered the same time advantages for these shipments as for the silk.

OTHER PACIFIC COAST PORTS

Stockton, on the San Joaquin River has become a major port in recent years handling over 3 million tons in 1963. Agricultural products and wine make up the bulk of its outflow. The remaining Californian ports are more specialized in function. Estero Bay and San Luis Obispo ship crude petroleum to the refineries in San Francisco and Los Angeles. San Diego, a major naval base, is in the traffic shadow of Los Angeles and too close to the Mexican border to have a sizeable hinterland. It serves the densely populated coastal strip and is close enough to Greater Los Angeles to serve as an alternative port.

A rather narrow belt along the coast accounts for almost half of the country's timber production. Most of the large sawmills and pulp and paper mills have a tidewater location. Timber and the many products made from it provide most of the cargo handled at many of the small ports but this commodity group is also important in the large ports.

There are many timber ports along the coast from Eureka, California, to Grays Harbor, Washington. Other ports on the Columbia River, seaward of Portland are Longview and Astoria. Puget Sound ports are dominated by forest products and petroleum, but Tacoma, among them, has a diversified cargo traffic. Its large copper smelter is an important generator of seaborne traffic.

CHAPTER III

The Role of the Federal Government in Port Administration Organization, and Development

Some of the activities relating to the operation of ports in which federal agencies are involved concern the development and improvement of port areas. Some affect ships and their cargoes. Some are associated with harbor and channel work and the facilities for the conduct of shipping. A large number of federal agencies participate in the promotional and regulatory functions of transportation, of which port development is a part. In the austere budget year of 1949 these activities involved a billion dollars in federal appropriations; 93,000 persons were employed in carrying out the work.[9] The dollar and civil servant totals of today are much larger. Some of these agencies are concerned exclusively with port and transportation matters, generally with one particular form thereof, while others perform services which are utilized to a large extent by the entire transportation industry. Local port governing bodies must work closely in cooperation with the several agencies but there is little coordination among the various agencies outside those entailed in the clearing of ships entering and leaving the harbors. The functions of such agencies and a review of how some of their activities affect the ports follow.

Department of Agriculture

The Board of Plant Quarantine administers the regulations of the Department concerning the entry of plants and plant products from outside the continental United States. Their purpose is to prevent the introduction of insect pests and plant diseases to the country. The Board also administers the regulations for export of such products to meet the sanitary requirements of foreign countries.

The Branch of Animal Industry has similar jurisdiction over animals and animal products. Not limited to overseas commerce, it has control over the movement of such products between the States and possessions of the United States.

The Bureau of Customs and the Coast Guard aid in the enforcement of such regulations and ships may not be cleared for entry nor their crew, passengers, or cargo landed until a release is filed by the agricultural inspectors.

Department of Commerce

The Bureau of the Census and the Bureau of International Commerce are charged with responsibility for collecting and publishing certain data concerning the movement of ships and cargoes through the ports of the United States. The Weather Bureau provides meteorological service to ships and ports, including the preparation and distribution of forecasts and warnings via

voice and wireless radio, teletype, and facsimile weather maps over several coastal radio stations. The Coast and Geodetic Survey surveys and prepares charts of the harbors and coastal waters of the United States.

The Maritime Administration is primarily concerned with matters affecting ships, but there are some matters which are of vital concern to ports. The size and characteristics of ships promoted by the Administration affect channel dredging, pier construction, and terminal handling facilities. The establishment of foreign trade routes designated as essential to the United States and the decisions on subsidy payments play a large role in fixing what commerce a given port will have. Under existing law, those ships which receive operating-differential subsidy payments are restricted to the limits of the routes and services prescribed by the Maritime Administration as being essential. Without the subsidy or with a change in the law, ship operators would be free to operate and call only at those ports which they feel are most profitable. The Maritime Administration has this power from the Merchant Marine Act of 1936. Specifically, Section 211 of the Act directs the administration, among other things, to determine:

> (a) The ocean services, routes, and lines from ports in the United States...to foreign markets, which are, or may be, determined by the Commission

(formerly Federal Maritime Commission, now maritime Administration) to be essential for the promotion, development, expansion, and maintenance of foreign commerce of the United States, and in reaching its determination the Commission shall consider and give due weight to...The number of sailings and types of vessels that should be employed in such lines, and any other facts and conditions that a prudent businessman would consider when dealing with his own business....

(b) The type, size, speed, and other requirements of the vessels, including express-liner or super-liner vessels, which should be employed in such services or on such routes or lines, and the frequency and regularity of the sailings of such vessels, with a view to furnishing adequate, regular, certain, and permanent service ....

If a port doesn't offer sizable cargoes, the operator would be able to avoid some ports completely.

The administration is authorized to acquire, lease, and dispose of marine terminals and warehouses. Currently, none are operated by the federal government.

The Under Secretary for Transportation has responsibility for appraising all national transportation policy, including the effectiveness of ports. All federal transportation programs are subject to assessment for evaluating the development of national policy. There are no powers of control and regulation accompanying this responsibility. Those that exist are in the hands of the several independent executive agencies. [9]

Department of Defense

The Corps of Engineers of the Department of the Army has the major responsibility for the improvement of approach channels and harbors. Since 1819, the Corps has been responsible for investigating proposed harbor and river improvements. Most of the work authorized by the Congress has been carried out by this agency. Work of improvement by persons, corporations, or municipalities at their own expense and risk, must be approved by the Corps.

Authorization of a project involves a complicated procedure. Projects are not initiated by the federal government. Local interests request their representatives in the Congress to introduce a bill authorizing the Corps of Engineers to determine the feasibility and economic soundness of the project. Upon enactment, the Chief of Engineers orders a preliminary investigation, and an open public hearing is held in the area of the project. Such surveys are based on existing information rather than field studies and most of them involve an expenditure of less than $1000. A preliminary investigation report is then forwarded through the Chief of Engineers to the Board of Engineers for Rivers and Harbors for study and recommendation. The purpose is to determine whether sufficient merit exists in the project to warrant a more detailed survey.

If the project is not deemed feasible, an unfavorable report is sent to the Congress. If the preliminary investigation indicates that further study is warranted, a detailed survey is made, plans are prepared, and a favorable report is made to the Board. The report indicates the present and prospective commercial importance of the project, the benefit to commerce likely to result, the need for extension and establishment of terminal transfer facilities contiguous to water proposed to be improved, and such other information as may be necessary to indicate the need for improvement. Each report contains a statement of the benefit which will accrue to localities affected by such improvement. Also, there is a statement of general or national benefit, together with a recommendation as to what local cooperation should be required, if any, on account of such special or local benefit. ~~Finally,~~ Finally, the District Engineer makes an estimate of the sum of the benefits and savings that will accrue over a period of time from the use of a given improvement, as compared with the cost and maintenance of the improvement, to determine whether or not the expenditure of public funds is economically justified.

The Board of Engineers for Rivers and Harbors makes the final recommendation to the Chief of Engineers. The report is passed to the governors of the states involved, and the

package is submitted to the Congress for authorization and appropriation legislation as part of the civil functions of the Army in an omnibus River and Harbors bill. Upon enactment, the Corps of Engineers adds the project to its list. As funds are appropriated, they are expended for listed projects in the order of their importance as determined by the Chief of Engineers. [18] Harbor improvements is not an assigned responsibility of the Engineers but has come about from the legislative acts authorizing the work and designating the Engineers to carry out the work.

Since 1891 the Corps of Engineers has been responsible for determining the amount of commerce using navigable waters and ports of the United States and to provide for the collection of statistics at points of arrival and departure of vessels, regarding passengers, freight, and tonnage carried (see Appendix B). Since 1920 the Corps has had to provide for the compilation, publication, and distribution from time to time of such useful statistics, data and information concerning transportation on inland waterways, as may be deemed of value to the commercial interests of the country. [22]

Other agencies of the Department of Defense have influenced the operation and administration of ports through the construction and use of facilities in the conduct of military affairs.

Requirements have been laid for channels and navigational aids to ensure the unobstructed movement of naval vessels and commercial carriers in those harbors which are in joint use. In wartime, the Armed Services have taken over a considerable number of port facilities and in some instances have actually taken control of entire ports, such as San Diego, Miami, and Orange, Texas.

Department of Health, Education, and Welfare

The Public Health Service, under the Surgeon General of the United States, is responsible for the general health of persons and for the general sanitation of ships arriving at the country.

Department of Justice

The Immigration and Naturalization Service is charged with the responsibility of examining each person seeking admission to the United States to determine whether he is legally entitled to enter, and prevent unauthorized entry. Since physical and mental deficiencies and ailments are among those that disqualify aliens from admission, the examination of immigrants is carried on in close cooperation with the Public Health Service.

Treasury Department

The United States Customs Service is charged with responsibility largely related to the entering and clearing of

ships and to the loading and discharging of cargo at ports. It is in the power of the Service to board and inspect a ship engaged in foreign trade at any time it sees fit. It may hold up entrance or clearance of any ship pending compliance with regulations, whether it operates under the United States or a foreign flag. This authority has been developed from the various tariff acts, but extends far beyond the search for contraband and the collection of import duties. The Customs Service enforces the laws of the United States and the state in which the port is located, and regulations of other federal and local agencies by acting as agent for the several agencies.

The functions of the United States Coast Guard include those connected with marine law enforcement, rescue service, aids to navigation, marine inspection, and documentation of seamen. In time of national emergency the Coast Guard is responsible for the administration of port security.

Other Agencies

The Interstate Commerce Commission is directly concerned with ships engaged in intercoastal and coastwise (interstate) trade. The railroads which "belt" several ports and own piers are often subject to the rulings of the I.C.C.. Several other independent executive agencies, mostly concerned with railroads, have functions which involve them in some aspects of port operation.

Summary

This review of the activities of the several federal agencies in ports indicates that the federal government is primarily responsible for harbor channels, navigational aids, and the control of foreign commerce passing through the ports. The Congress and the agencies of the federal government have refrained from directly occupying the field of port control and development. As a general proposition, port administration and port government is largely in the hands of local authorities. But these federal activities give the local port authority a task and service of additional coordination to facilitate the flow of trade through the port.

CHAPTER IV

ADMINISTERING THE PORTS[1]

Seaports generally have been built, not designed or planned. It is their purpose to provide at the focal points of shipping lanes the facilities for the transfer of goods between land and water carriers and between these carriers and user or producers located within a port, or these in combination. The functions of the ports are to provide the physical means and the economic activities necessary to perform this role. The ports of the United States, like their counterparts elsewhere, have taken widely varying and very individual approaches to the concepts of government, operation, and development.

Port authorities and port management were not established as a general practice among American ports before the twentieth century. Only San Francisco, New York, New Orleans and Philadelphia had port authorities in the sense of having port agencies with broad administrative powers. A harbormaster or wharfinger was appointed by the state or municipality to look after the facilities, to enforce certain rules of navigation in

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[1]The material for this chapter has been largely adapted from: The American Association of Port Authorities, HANDBOOK -1965 (Washington: 1965);Helen Delich Bentley (ed.),Ports of the Americas (Washington: The American Association of Port Authorities, 1961);Marvin L. Fair,Port Administration in the United States (Cambridge, Maryland:Cornell Maritime Press,1954).

the harbor, and to assign ships to berths where not otherwise provided. Port communities generally relied upon the federal government for harbor and channel dredging and navigation aids, and upon private interests for all else. Private industries included the railroads, steamship lines, terminal and warehousing companies, the waterfront services, and extractive industries which were exploiting the hinterland resources of the port. Bulk commodities remain the most important traffic of some ports to this day, although this is more true of the Great Lakes and our inland waterways than of most seaports.

During the last half of the 19th century the railroads were the dominant developers of commercial waterfronts at many of the important seaports. In some cases, a trunkline railroad would be identified with one port. This was an effective way to develop a port. But when the railroads, to improve their competitive position, laid track to several seaports some ports suffered, some prospered even more.

Eventually most ports found it unsatisfactory to continue reliance on private business interests alone. In some instances extractive industries exhausted the resources which accounted for their development or the market was lost; railroads and steamship lines developed divided interests at other ports. Ever changing economic factors required a more public approach. Some

ports found that for orderly development of their waterfront and not mere exploitation, competing private interests were not the answer. All of these factors led to considering the establishing of a supervisory authority.

ORGANIZATION AND GOVERNMENT

What is a port authority? In its broadest sense it is the body established by law to have specified powers including the right to act within a defined area of responsibility. This definition is one which can apply to any entity called an authority. Here, the term is most used to apply to any quasi-autonomous or quasi-independent agency which has the adequate authority and freedom of action to provide for an effective management of a port. Under existing state and local laws, the definition would exclude some government corporations which do not have adequate jurisdiction or degree of independence while including many established commissions and some government departments of an executive type.

Geography, history, politics, and socio-economic considerations have all been part of the determination. There have been and are cases of several enterprises serving the port areas of communities all operating independently of each other, some coordinated, some not. Some ports, in whole or part, are administered by private corporations, some are municipal

or state departments, some are independent commissions responsible to city or state governments. Some are bi-city, some are bi-county, some are bi-region, some are bi-state. Some are combinations of these. Some states have grouped all of the ports in their states under central supervision but local operating control. Some ports are tax-paying, some are tax-producing; some are self-supporting, some are tax supported. While there is general agreement on the functions characteristic in a port authority, there is general dissimilarity on the approach to administration.

The type of governing organization of a port refers to the form and the extent of powers specified in its legal authorization. Port authorities obtain their legal powers by action of the state in which they are located. This may be by specific act of the legislative body, under a general legislative or constitutional provision, or under executive powers delegated by the state.

Port government organizations may be classified as follows: (1) the government departmental agency, state or local, of the executive or commission type; (2) the independent commission, state or local, which may be elective or appointive; (3) the advisory commission; (4) the public corporation, bi-state, state, or local, with members of the board (sometimes called a commission or trust) being elected or appointed; and (5) private

corporations, which are really operating management bodies and not authorities in the normal sense. Table I is a representative listing of the different approaches taken by port authorities.

The port authorities are usually boards, composed of commissioners, trustees, or supervisors whose powers and authority vary widely. Headed by a Chairman or a President with membership composed of Commissioners, Supervisors, Trustees, or Members, port authorities set the broad objectives, plans and programs which are shaped by the legal provisions establishing it. It would seem that to exercise authority port bodies would have exclusive control over the harbor and waterfront areas which constitute the port. Such is the case in only a very few of the port authorities of the United States.

Membership on such boards is normally represented by the business and labor entities of the port, and occasionally by the political interests of the parent organizing body. The size of the boards varies from one to sixteen members with terms of from one to ten years. The usual number is 5, the normal term is 4 to 5 years.

The administration of the waterfront and trade promotion of the port are the two areas in which most port authorities

TABLE I

Representative U. S. Port Authorities

Port	Governing Organization	Port Authority Commission	Sources of Funds	Management
Alameda	Private Corporation	None	R	Encinal Terminals
Baltimore	State Public Corporation	Combined with Mgt.	A,B,N,R	Maryland Port Auth.
Boston	State Public Corporation	Board of Commissioners	A,N,R	Massachusetts Port Auth.
Charleston	State Public Corporation	Board of Commissioners	A,B,N,R	South Carolina State Ports Authority
Galveston	City Public Corporation	Board of Trustees	B,N,R	Galveston Wharves
Houston	City-County Commission	Board of Commissioners	B,N,R	Harris County Houston Ship Channel Navigation District
Long Beach	City Commission	Commission	A,B,N,R	Board of Harbor Comm.
Los Angeles	City Public Corporation	Commission	A,B,R	Board of Harbor Comm.
Mobile	State Commission	Combined with Mgt.	A,B,R	Ala. State Docks Dept.
New Orleans	State Public Corporation	Board of Commissioners	A,B,N,R	Board of Comm. of the Port of New Orleans
New York	Bi-State Public Corp./ City Department	Board of Commissioners/ City Department Head	B,N,R/ A	Port of New York Auth. Dept. of Marine & Aviation
Norfolk	City Public Corporation	Port Commissioners	A,B,N,R	Norfolk Port & Indus. Auth.
Oakland	City Commission	Board of Commissioners	B,N,R,T	Port of Oakland
Philadelphia	City Department [1]	Delaware River Port Auth.	(See Note)	Port Div. Philadelphia Department of Commerce
Portland, Ore.	City Commission	Port Commissioners	B,N,R	Commission of Public Docks
Richmond, Cal.	Private Corporation	None	R	Parr-Richmond Terminal Co.
San Francisco	State Commission	Board of Commissioners	B,N,R	San Francisco Port Auth.
Seattle	City Public Corporation	Elected Supervisors	B,N,R,T	Port of Seattle

Legend: A: Appropriation; B: Bond Issue; N: Non-Port Revenue (Bridge tolls, space leases, etc.,); R: Revenue from Operations; T: Taxes.

[1] The Port of Philadelphia is operated as a joint city and multi-state enterprise by the City of Philadelphia and the Delaware River Port Authority of Pennsylvania and New Jersey, which has an Executive Director and a bi-state commission. Between them all sources of funds are available

Source: Port Administration in the United States and Ports of the Americas

are involved. Trade promotion is sometimes a separate function and the agencies performing the task work with, and sometimes for, the port and waterfront administrative bodies, chambers of commerce, commercial and transportation bodies of the port, and shippers and receivers of goods within the ports and at hinterland origins. These agencies also are called upon to represent port interests with other ports and government agencies.

In the early days of most ports, the waterfront agencies came into being as a result of the demand for them. In every sense, they were private enterprises, except for harbor control.

Waterfront agencies are the port in most respects. The control exercised by the port authority is the function of government transformed into operation by the management.

OPERATION AND MANAGEMENT

The functions performed by a port authority through its working management comprise, to a large extent, everything that may be necessary for the creation, upkeep and expansion of the port, its working operation, and the control of its affairs. They must, of course, depend largely on the facilities owned by the port. If facilities are leased or contracted out, or are privately owned, the work of port management is small and largely one of coordination. At the other extreme are port

managements who operate the entire harbor and waterfront. They build, maintain and operate the terminal facilities, run belt line railroads, police the harbor, own and lease out industrial sites, operate bridges and airports, organize and operate pilotage bodies, run stevedoring operations, and promote traffic for the port. Most ports are somewhere in between. In general these functions include the following:

1. Dredging of areas not maintained by the Corps of Engineers.

2. Promotion of trade and traffic through the port and public relations.

3. The preparation of plans for the development and coordination of facilities of the port.

4. The power to raise funds for operation improvement by fees, bond issues, or taxes.

5. Purchase of land and facilities required for the development of the port, including the power to purchase, develop, and leasing of industrial sites.

6. The exercise of the power of eminent domain to condemn land and facilities for the development of the port.

7. The assignment of ships to berths at public owned facilities.

8. The establishing and collecting of charges at public-owned facilities and the power to lease facilities.

9. The construction of needed facilities, and the maintenance of public owned waterfront facilities.

10. The maintenance of statistics and reports in regard to port operations and finance.

This listing of functions is not complete, and it must be stated that power of eminent domain is limited and usually subject to the approval of the establishing body. Somewhat surprisingly, the function seldom performed by most port authorities through their managing agency is that of terminal operation and the attendant stevedoring operation. Control over pilotage and regulation of harbor traffic are two other functions which are usually not under the purview of the port authority.

The board of commissioners usually has complete freedom to select the management staff, except that below the executive level some employees are under the municipal or state civil service. Other managements follow the provisions of civil service. The port management is headed by a professional director, or manager, under the title of Executive Director, Port Director, Director, General Manager, Manager, Managing Director, or Port Manager.

The size and structure of the port operating management varies more widely than does the nature of the authorities

themselves. The nature of the authority in a given instance is shaped by the legal provisions which establish it. The nature of the management organization is shaped by the activities of the port. The activities of the port may represent but a portion of the functions which the authority is authorized to perform. Their staffs vary from only a few persons to several hundreds, depending on the scope and breadth of the functions undertaken.

DEVELOPMENT OF THE PORT

Port development is a matter of great importance and expense to the local community and the nation. As a focal point of much of the commercial life of the city, its development has a direct effect on the terminal operators, carriers, warehouses, stevedoring firms, ship suppliers, freight forwarders, banks, and waterfront industries. Through local importing and exporting firms the port is extended into much of the commercial, financial, and manufacturing life of the port area. The port is a major factor in the total employment of people and resources of the port city.

In port cities, an important class of income is created by the port services sold to the users of the port. The value cannot be read directly from examining the local accounts since public and private enterprises which sell services engage in

port and non-port activities. But sales to exporters and importers can be taken as a rough indication and it is possible to approximate the value of such services. There are complementary effects from such activities which influence the development of the port. In the study of Local Impact of Foreign Trade conducted by the National Planning Association, it was determined that the port services sold in Mobile, Alabama, in 1951 totaled close to $39 million, with a resultant primary and complementary household income creation of over $25 million.[15] A general breakdown of the contributing factors include the handling of exports and imports by terminal and warehousing facilities, the receipts of the transport carriers used in carrying the goods of the port, the trade promoted by industries within a port complex, the activities of the finance and insurance businesses, the husbandry supplies and repairs to ships, and the benefits derived from traders using the port.

The development of the port is the goal of the interests of the port. Through development, the ports are able to promote the economy of the port city and its hinterland. But consideration must be given to the degree of competition which exists among port service industries and or the substitute effects which one port's transaction may have upon another port. Cargoes moving through a port are usually originated or

destined for inland points. Shipments to and from can be made by barge, rail, or truck, and sometimes by air. When the shipment is made by any one of these competitors, the others are injured, and their growth or development may be curtailed. The net effect on the port may be small, particularly if the carriers are local firms. The result is quite different in the case of competition between ports. Thus if New Orleans draws traffic from or for an area that could move through Mobile or Houston, the ports and the port service industries in the last mentioned cities are injured.

The hinterland area of a port is threefold: (1) the local area consisting of the port city and the immediate surrounding area; (2) the port's natural hinterland where the given port or harbor area has a definite trade advantage with respect to rates and services; and (3) the competitive hinterland where more than one port can serve on a comparable, or nearly so, advantage. The comparative or absolute advantage will vary with the area, the commodity, the rate structure, and the carriers and routes employed. The contour of a port's competitive hinterland tends to overlap with other ports as distance inland increases.

Sometimes the proximity of other ports makes the natural hinterland narrow or non-existent, it may all be competitive.

On the eastern seaboard ports are in such close proximity that their respective natural hinterlands are very limited. The ports of Boston, New York, Philadelphia, Baltimore, and Norfolk, with a number of smaller ports, are so close that each has a very limited natural hinterland. As indicated in Chapter II, a large, well developed port may compete very successfully in the immediate area of the nearby ports - New York draws traffic from throughout the country because of its greatly developed services.

In the early years of the country it was usual to have the port, or at least the harbor, first and then the facilities and services would follow. Such is not the case today. In most cases, the success of ports has been greatly influenced by the connections provided with other carriers. The presence of large trunkline railroad systems and highways for trucks leading to the port city are of major importance.

It has been quite common for a single carrier to own or control a considerable portion of the terminal facilities in the ports. Frequently the dominant carrier (usually a railroad) set terms for joint use which were to the detriment of other carriers and to the port and the city in general. Railroad ownership of pier facilities in Boston prior to World War II and the switching and transfer charges resulting therefrom, meant

that cargoes destined for points on more than one road ran the risk of delays and high costs. [16] This offset the natural advantage Boston has in being one sailing day closer to the ports of Europe. With assumption of public control, this disasterous (for Boston) arrangement is being overcome.

The time and cost of handling and transfer of cargoes at a port adds greatly to its ultimate cost to the consumer. In those cases where there has been consolidation of piers, terminals and warehouse facilities the savings generated and the success of such unified control has been significant. [3] To promote or compel such arrangements, most of the big port cities have created planning and promotional agencies for orderly port planning. But they are not necessarily tied to the city planning in the areas they serve.

In the early days of most ports, the waterfront area was there for anyone who wished. Each enterprise tried to establish itself for its own interest, more often than not independent of the general community. [8] With the development of the concept of the port as a service for the general public, interest in the activities serving the port also developed. Shipping and commercial organizations brought pressure upon the Congress, state legislatures, and city councils for improvements for specific projects. This was done under the premise

that development of the port advances the industry, commerce, and general economic health of the area. Due to competitive pressures between ports and amongst port service industries within ports, many requests were, and are in the case of requests for federal assistance, made to any government agency that might assist. [16] The problem of several agencies has come about because they came into existence at different times and in many cases their purpose was of a different character than exists today. Under a system which developed in this fashion it is at least understandable that development and promotional agencies would have varied and often conflicting objectives.

Frequently the authorization of projects has been made without consideration of the ultimate costs, either for support or later add-on features needed for completeness. In the development and promotion of facilities from public and private funds, often the amounts spent, the purposes of the expenditure, and the methods of expenditure have not been governed by any common set of considerations. [21] If we can consider that the modern port is a complex set of facilities together seeking to serve the interest of private enterprise, the community and the public as a whole, there must be long range, broad planning to avoid practices that are wasteful and not in the public interest.

> ...The pier or wharf provides the meeting place and the transshipment platform at which cargo and passengers are exchanged between land and water transportation carriers. In the field of ocean transportation, a pier or wharf is, at one and the same time, a terminal point for rail, highway, pipeline, and inland waterway carriers, and a terminal point for ocean ships. Upon the proper design and workable layout of piers and wharves, depends in a large measure the degree of efficiency in the handling of cargo, directly effecting the all important turn-around time and resultant expenses of ships in ports....[17]

And it adds to the cost of goods.

The builders of ports have a difficult set of interdependent factors with which to cope. The ship designer has been the pacemaker while the port engineer must take the innovations which the former produces and fit them into the physical limitations of the harbor and the terminal site. Advances in land transport greatly influence the efficiency of marine terminals, also. For example, trucks once had a general standard tail-gate height of 42 inches. This is no longer true, and the loading platforms of terminals must now provide for the change or there are increased costs of additional handling. Containerization of cargo requires not only special handling equipment but large working areas.

But a program of port development encompasses more than just a build-up of facilities. There are several interdependent activities which serve to increase the commerce of a port. Usually a port cannot hold or increase a given segment of trade,

nor attract new trade unless the cost and quality of service offered compares favorably with other ports. So in formulating or evaluating any plan of development a realistic estimate of the potential trade must be made and assessed against current facilities, to potential of the area, and the effects of competition. The plan must be married to the city and the area economic plan. Some ports which benefited greatly from the establishment of planning commissions to do just this are those in Seattle, Baltimore, New Orleans, Portland, San Francisco, and New York. [16] Galveston, Mobile, Houston, and Los Angeles have port commissions which have accomplished excellent development separate from the areas they serve.

Prior to World War I, the Port of Galveston was one of the few ports of the country which had an orderly and planned development. The port plant had an arrangement of terminal wharves, warehouses, and railroads, all operated at the time under a private corporation, which still provides the basis of the modern port owned by the city. The Port of Los Angeles is still following the broad plan which was established in the early 1920s, with constant updating. The Port of New York, of course, is considered to be a milestone in a new era of port planning. But even here there is a division of "authority".

The Port of New York Authority is a transportation and

development body with responsibility for developing the bi-state harbor; for promoting the commerce of the port; for operating such non-port activities as the three metropolitan airports, the bi-state bridges and tunnels; and for general control of 30% of the deep-water berths and port terminal facilities throughout the harbor excluding Manhattan, Staten Island, and parts of Brooklyn. These last mentioned are under the control of the Department of Marine and Aviation, City of New York. In effect, almost half of the deep-water terminals in the port are owned by this City Department. It has only been recently that the Authority has operated and developed waterfront facilities. Before 1944 it operated more as a transportation and harbor control authority. During its early years the Authority concentrated most of its efforts on alleviating harbor and waterfront congestion and attempting to reorganize the railroad system serving the metropolitan area of the harbor. These were primary considerations in creating the experiment in port government which it was termed at the time. Cooperation of the several railroads was necessary to develop a belt system which the Authority determined was needed to more effectively serve the harbor area. The railroads did not cooperate and the belt line was not undertaken. The bi-state act establishing the Authority granted broad powers but it "became evident that the compact and the plan acts had not vested in the Authority

the regulatory and coercive powers necessary..."[1] The Authority can involve itself in terminal construction and operation only with the consent of the municipality or private interest owning the property. Railroads, private interests, and municipalities in both New York and New Jersey operate terminals in the Port. Any one of these groups may develop without regard for another.

There are other ports of the country which have jurisdictional problems. Very few own and control all of the waterfront under their "authority". The ports of the Delaware River have a bi-state agency which has operational authority only for a few bridges; it has no control over any port function, but is engaged in promoting the commerce of the ports on the navigable part of the river. The Virginia State Ports Authority has responsibilities for port development for the state but the Port of Norfolk has its own Authority for operation. There are other ports which have jurisdictional overlappings between individual ports and regional or state authorities, as well as within ports between public authorities and private operators or facilities.

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[1] Bird, Frederick L., A Study of the Port of New York Authority (New York: Dun & Bradstreet, Inc., 1949).

Harbor frontage has been acquired by industries for the development of terminal facilities to be used by such industries. Some of these terminals can be used for general cargo operations. Most port authorities have no power to regulate the terminal charges of private terminals or publicly owned but privately operated terminals. Railroads resist control on the basis that their rates are regulated by the Interstate Commerce Commission.

Even the existence of one public port corporation does not necessarily preclude the existence of another independent administrative body. This has been previously indicated but the case of Portland, Oregon, exhibits an extreme. Here there are two bodies, functioning side by side. The powers vested in the Port of Portland Corporation (now Commission) are:

> ...to promote the maritime, shipping and commercial interests of the port; to make and maintain an adequate ship channel between Portland and the sea and to improve the harbor of Portland; to maintain a towage and pilotage service between Portland and the sea; to construct and operate dry docks; to sell coal and supplies to ships... to own and operate transportation units...to borrow money, sell and dispose of bonds...to construct or purchase docks, wharves, elevators, terminals, dry docks, or other properties.. to own acquire, construct or purchase, lease railroads and to maintain them within the boundries of the port...[8]

The Commission of Public Docks (City of Portland) operates under the following instructions:

> ...To cause to be prepared a plan for the reconstruction of the harbor front; to provide for the reconstruction of docks, piers, slips, wharves, basins, cranes and dock apparatus, as needed; to provide for public-owned docks; to purchase or acquire lands for use in the construction of docks, piers, wharves, etc.; to have exclusive charge and control of the wharf property belonging to the City of Portland, the repairing, building, rebuilding, operation, alteration and leasing of the said property...to issue and dispose of bonds...to fix and regulate from time to time the dockage wharfage and crane charges for all publicly-owned docks, piers, etc..[8]

The first traces its authority from the State, the second from the city. Both have what could be termed as adequate control but, as these excerpts indicate, it is not exclusive and few definite distinctions can be made between their spheres of action.

Where many agencies exist with partial, conflicting, or overlapping jurisdiction, it is impossible to exercise control which is in the public interest. Different groups can go their separate ways without reference to each other. There are conflicts and overlaps in development projects, promotional schemes, and operations. Economists have a phrase for this - the inefficient allocation of resources. For any port authority to be responsible for development a port, partial, conflicting and overlapping jurisdications must be eliminated, and functions absorbed.

The ports of the world, in general, serve the same world fleet of ships, or similar cross sections of it. Therefore, ports should have the same incentive to provide facilities of similar dimensions and capacities. The trend to simplification of cargo handling techniques, to save handling costs, and larger ships, to reduce transits and ship operating costs, pose difficult problems for port developers and their designers.[17] It may be as much as five or more years before a port development starts to earn revenue.[4] This represents one-fourth to one-fifth of a ship's life. M. Arnet Robinson, Chairman of the Mersey Docks and Harbour Board, stated it nicely in a speech on November 24, 1960:

> ...In the case of ports and especially a great tidal port like Liverpool, much expenditure must be devoted to such works as docks and entrances, which are among the strongest and most enduring of man's labours and, therefore, take a considerable time to build and develop. One often feels in such matters belanced on a razor edge between too early a start with a consequent undue burden on the generation concerned or delaying too long with a hinderance to the next generation....[4]

The larger the ship and the more advanced (simplified) her means of cargo handling, the fewer the ports which can accommodate her. The Maryland Port Authority recently requested the Corps of Engineers to dredge a 45-foot channel from the sea to Baltimore. The coal producers believe they will lose considerable business otherwise as Hampton Roads has

received approval for such a project. [19] Everyone here is in the right as all ports should have the depth, if it is economically feasible, if one can. U. S. Congressman George H. Fallon has proposed that the nation's ports, and perhaps the ports of the world, should initiate discussions to reach some agreement to place reasonable limits on channel depths.[1] He believes that both the federal government and local areas otherwise will be "caught on a spending treadmill" because of competitive pressures between ports, and that "the money will continue to be sucked out of the federal and local treasuries as fast as the mud is sucked out of the channel bottoms."

Ports which cannot handle the new giants of the sea will suffer a loss of trade and so they make every effort to develop channels and facilities to serve the deep draft ships. Port interests and public monies are going into deeper channels and into new types of facilities. Both channels and facilities may be obsolete before completion.

The recent trend to containerized cargo is another factor in the area of port development which must be considered

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[1] Speech prepared for delivery before the North Atlantic Ports Association at its meeting December 2, 1964.

now, and on a grand scale. The use of the container can bring about huge savings in handling (stevedoring) costs, and in terminal costs in the long run. Stevedoring and terminal costs can run as high as 50% to 75% of the total shipment costs. [2] The moving costs of goods 200 feet at a pier can equal the land or ocean transportation costs of hundreds of miles. It has been estimated that a fleet of container ships could carry 675,000 tons of cargo a year at (1960 prices) figures of $1,480,000 to $5,780,000 for cargo handling costs as opposed to the conventional ships' $13,630,000.[1] The wide spread in costs is explained as dependent on the amount of container loading which would have to be done at the ocean terminal; 0% in the first instance, 100% in the last. The port of New York Authority recently completed an integrated container facility costing $22 million, which took three years to construct. [19] Port developments cost money and they take time.

Consideration of the ports of the nation as national resources has become a major concern of Great Britain, whose very existence is dependent upon the trade which moves through

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[1]Based on D.C. MacMill and T.B. Westfall, Competitive General Cargo Ships, The Society of Naval Archetects and Marine Engineers. Presented at the Annual Meeting, November 18, 1960, Table 10.

her ports. In 1961 an investigative body was established, titled the Committee of Inquiry into the Major Ports of Great Britain (the Rochdale Committee), whose purpose was to make a comprehensive study of port development in that country. One of the results of their findings was the establishment of a national port commission which has control over all port development programs of any size, although they have no operational authority. The report indicated that there was a waste of national port resources through over development in some areas and under-development in others. (A summary of the major conclusions of the Rochdale Committee is set forth in Appendix C.)

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The ports of the United States are administered under widely varying approaches to authority. The characteristic types were formed to suit conditions at individual ports. While initially viewed as an extension of trade interests, the concept of ports as public utilities of a sort evolved. Some areas gave early recognition to the concept of the port as a public trust, but in general it was not until the 20th century that this type of port government found favor. There has been a gradual development of some type of public control over port operations, if not outright ownership of the harbor frontage and the functional means of operation. In most parts of the country the port authorities are very local operations, but there has been some movement toward combined authorities of a harbor area, a state, or a region. Some of these have exclusive jurisdiction over all aspects of the harbor, some have concurrent or mixed jurisdiction with other public authorities and private interests, some have none; despite its name, the Delaware River Port Authority has no authority over any port on the Delaware River.

Some ports are merely transshipment or loading points for one or a limited number of industries; such as the lumber

ports of the Northwest, or the petroleum and chemical plants on the Gulf. Some transportation and industrial firms have invested in certain specialized aspects of ports; as in the case of bulk commodity users on the Delaware River, Hampton Roads, and Richmond, and the railroads in Boston, New York, Baltimore, and Seattle. Occasionally this has resulted in an industrial or carrier dominance of the port. But public funds are spent in dredging the channel approaches to such private facilities. As was shown in the section on development in Chapter IV, government action contributes to other aspects of port operation and development, some of which benefits only private firms. The extreme case is that of Oakland which virtually was the personal port of one individual, Horace Carpenter. As enrolling clerk in the California State Legislature, he engineered the incorporation act of the town in 1852. A few weeks thereafter, the town trustees granted title of its waterfront to him. He became a millionaire from port fees, later sold his rights to railroads, and the city did not regain control of its shoreline until 1907. Transcontinental railheads established at the city continued a strong railroad influence and the port served only as a transshipment point to San Francisco until a planned program of development was placed into effect in the late 1920s. [3]

Existing ports may be sufficient in number and capacity to

meet the security requirements of the country. When asked to comment before a Congressional Subcommittee on the adequacy of the nation's transportation systems to meet the demands of national defense mobilization, John J. Allen, then (1959) Under Secretary of Commerce for Transportation said about ports:

> ...Ports: With respect to the current ability of America's deepwater ports to meet the demands of war it can be stated that our present transshipment capacity considerably exceeds that available during World War II. This is true without taking into consideration the significant additional capacity now available within the Great Lakes.
>
> No concern need be felt in at least matching World War II port transshipment achievements during any future international emergency which does not involve the destruction of the ports. This reflects past experience in Federal control of freight movements to ports, continuing improvement of cargo handling techniques, and currently planned control of port utilization in general....[20]

But time changes everything and some ports may have inadequate or obsolete facilities to meet the new requirements of commerce. In a prepared statement read before the same Subcommittee the Board of Engineers for Rivers and Harbors stated:

> ...All deep-draft (coastal) harbors and the entrance channels are maintained by the Corps of Engineers at the direction of the Congress. This does not preclude local authorities from undertaking similar work, and sometimes they do, on approval of plans by the Department of the Army.

> Non-federal interests are wholly responsible for providing terminal facilities - the means to unload, to store and to transfer the cargo to and from the land transport system. Terminal facilities are constantly being bettered. In fact, we find that our [10 year] surveys of port facilities are frequently outmoded in much less time than that...
>
> The capabilities of ports and channels for expansion under emergency are often limited by the situation ashore, that is, by the berthing facilities, facilities for handling and storing cargo, and the land transportation complex...
>
> The existence of many ports widely dispersed along the coasts of the Nation offers alternative routes for the dispatch and receipt of commerce, but the flexibility in their use diminishes as the size of the vessels increases, as is presently the situation for carriers of strategic cargo...[20]
>
> Government policies and practices engender the utilization of waterways for commerce....

The full significance of government policies is measured not simply by federal action itself but by the influence of federal action as well. The policies which govern federal activity in the promotion and development of ports are major factors in determining the costs; the Corps of Engineers will not improve a channel if, in their view, there are inadequate attendant facilities ashore; and the local economic feasibility is determined by the District Engineer. At no point in the process is the proposal assessed with over-all requirements and no check is required with any transportation agency. Such policies influence the allocation of traffic and the pattern of investments.

Ports are complex enterprises representing enormous capital investment. Shipowners desire the latest and best ocean terminals; the port operator wants to know who will pay for the facility. Close liaison between shipowners and port authorities is necessary to ensure agreement on the design of new facilities. But new techniques in port installations can be developed at any of the major ports of the world. New developments in land transport and cargo handling techniques are coming forward all the time. Given that the individual port authorities had or would establish separate research divisions in their organizations, it would be difficult for one port to be familiar with all advances. Currently, research or development groups are present in only a very few ports. [10] Even here, the practice is to serve as a check on the engineering feasibility of projects and not to conduct research as generally envisioned.

On the national level, the U.S. Maritime Administration cooperates with local authorities in matters of construction and general development but it does not conduct research nor does it have the power to control or influence individual action. Further, no agency of the federal government is responsible for research and review of port development or transportation trends as they affect present and future policies. [9] In his comprehensive

study of British ports, James Bird proposed the following functions be vested in a national body:

(1) To collect data world-wide on port and shipping developments and to set up a port and shipping library.
(2) To investigate all complaints of delays at ports. (For example, since congestion of export traffic is still largely caused by the fact that one-third of export cargo arrives on the last day for cargo reception, a comprehensive survey of exporters' practices seems called for.)
(3) To act as advisor to the Minister of Transport when Parliamentary Bills are deposited seeking powers to extend ports.
(4) To advise of the design of port installations in the light of experience of port developments all over the world. [4]

The stages of port development involve the acquisition of real estate, construction of restraining bulkheads, grading and filling of low areas, provision for highway and rail access, and dredging to name a few. These all may be preparatory or complementary to the construction of cargo handling terminal facilities which in themselves may be self-supporting. But there is risk incident to the wide fluctuations in the flow of trade through a port arising from the general trend of exports and imports and from competition between the terminals of a port as well as from port competition itself. Any change in market composition, shipping services, or government trade policy can cause an important change in a port's operation and its revenue. The survey of major port administrations of the

country conducted in the early 1950s by Marvin L. Fair indicated that less than half of them reported the existence of plans; that of these, many stated that no part of the plan was designated as short run as against long run, and that firm scheduling of improvements beyond the next fiscal year was unusual. [10]

Port development takes long term, coordinated planning as port installations must be designed so that they can be adapted to ever-changing ship types, methods of handling cargo, and the trends, composition, and patterns of trade. Considering these aspects, comprehensive planning needs to be done if for no other reason than to preclude outright waste of public funds and the loss of opportunity for the general public to achieve full benefits from government expenditures. But existing port authority organization, jurisdiction, and operation is frequently uncoordinated. This leads to considering central port administration, both on a harbor basis and on the national level.

Several studies conducted by private and government bodies have concluded that harbor areas represent integrated economic units; the trade and growth of the individual parts are interdependent within the area. [10] With the elimination of wasteful duplication of services and the resolution of several promotional programs based on different concepts of need, more

profitable development of the harbor area can be achieved. Harbor port authorities with power to initiate and exclusive control over harbor and waterfront operations and development programs could avoid the conflicts inherent in other schemes.

On the national level, a body not only concerned with port development but responsible for the coordination and supervision of the development plans of ports on a national basis could conduct the research necessary for considering the aspects of port development which affect the national interest and which are affected by changes in trade and technology. In matters concerning federal support of port ventures, consultation with such a body might be required of all federal agencies.

It is acknowledged that the benefits which accrue from better planning must be weighed against the additional costs which are incurred through such planning. Only in this way can we determine if the planning is worth the cost.

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APPENDIX A

PORTS ARE BIG BUSINESS

The Los Angeles Board of Harbor Commissioners have approved a contract for construction of a ship-loader at the planned new bulk-loading facility in Outer Harbor.

George D. Watson, commission president, said the work was awarded to the Pacific Coast Engineering Company of Alameda, California, in the amount of $566,900, with completion date scheduled November 1, 1965, followed by a 60-day trial and testing period.

The equipment, an endless chain ship-loader for handling bulk cargoes of iron ore pellets, will be installed at Berths 49-50 as part of the $4,750,000 bulk-loader recently approved for construction at Los Angeles Harbor.

-November 1964

The Department of Marine and Aviation, City of New York, is presenting to the City Planning Commision capital budget requests for the fiscal year 1965-1966 totaling $32,298,263.80. This sum represents $768,000 in renewals of funds included in the 1964-1965 capital budget and $31,530,263.80. in additional funds, states Commissioner Leo Brown.

Expansion south of Pier 29 to add 470,000 square feet of open and covered cargo-handling area at a cost of $7,000,000 has been announced by the San Francisco Port Authority. The new façility will be designated Pier 27.

-December 1964

During the last 15 years the Port of Houston has spent $37,568,330 on capital improvements and the management is continuing to formulate other expansion plans.

The Port of New Orleans will top $2,000,000,000 in value of its foreign trade for the first time in history, end-of-the-year estimates indicated.

The port estimate, based on U.S. Department of Commerce figures, set the total foreign trade value for calendar 1964 at $2,079,700,000, 11 percent greater than the previous year's $1,866,100,000. The Port of New Orleans traditionally ranks second in the nation in the value of its foreign commerce.

-January 1965

A record high of $191,838,600 for The Port of New York Authority's construction program at its major public facilities for 1965 is covered in a $368,408,600 budget adopted by the Commissioners of the bi-state agency.

-February 1965

The Commission of Public Docks, Portland, has revealed a long-range harbor development program for waterfront land uses for cargo handling, transportation, and industry on both sides of the Willamette River between the site of the proposed Fremont Bridge and the river's mouth.

The total harbor development program it forecast could be accomplished by the year 2000, the report said, at a total estimated cost of $120,000,000, wih the Dock Commission undertaking approximately $30,000,000 of that amount. Private and other public funds would produce the remainder.

-March 1965

The Port of Houston has awarded two contracts totaling $776,785 to start consruction of Bayport, a completely new $13.4 million port complex adjacent to N.A.S.A.'s Manned Spacecraft Center.

The Massachusetts Port Authority recently voted to accept a new Trust Agreement and a refinancing proposal to issue 3.80% Term Bonds for $73,200,000, and 3.50%, 3.40% and 3.60% Serial Bonds for $33,000,000.

A $2,240,000 improvement program which will include constructing two gantry cranes each higher than a 20-story building is being planned by the Port of Oakland and Sea-Land Service to meet the accelerating growth in the intercoastal containership trade.

Source: World Ports and Marine News; issues indicated.

APPENDIX B

PORT TONNAGE STATISTICS

Commerce at Principal U. S. Ports

EXCLUDING GREAT LAKES SHIPPING

Source: Corps of Engineers, Department of the Army

Calendar Year 1963. In tons of 2,000 pounds.

Port	Tons
TONNAGE SHIPPED AT MAJOR PORTS	
Port of New York, N. Y. and N. J.	154,476,480
New Orleans, La.	71,569,913
Houston, Texas	58,604,886
Philadelphia, Harbor, Pa.	49,124,253
Baltimore Harbor and Channels, Md.	42,587,893
Norfolk Harbor, Va.	41,528,250
Baton Rouge, La.	31,095,502
Beaumont, Texas	28,141,365
Port Arthur, Texas	25,685,151
Los Angeles Harbor, Calif.	22,239,534
Boston, Mass.	18,984,380
Texas City, Texas	18,576,203
Corpus Christi, Texas	18,118,523
Marcus Hook, Pa. and vicinity	17,942,196
Richmond Harbor, Calif.	17,694,795
Lake Charles, La.	17,495,785
Paulsboro, N. J. and vicinity	16,538,664
Mobile Harbor, Ala.	15,814,830
Portland Harbor, Maine	15,467,817
Tampa Harbor, Fla.	15,427,164
Huntington, W. Va.	14,005,157
Portland, Ore.	13,775,992
New Castle, Del., and vicinity	12,554,835
Port of Newport News, Va.	12,095,024
St. Louis, Mo.	9,791,897
OTHER PORTS MAINE TO WASHINGTON	
Rockland Harbor, Maine	111,827
Searsport Harbor, Maine	1,105,804
Portsmouth Harbor, N. H.	1,454,768
Burlington Harbor, Vt.	460,427
Beverly Harbor, Mass.	156,792
Fall River Harbor, Mass.	2,599,329
Gloucester Harbor, Mass.	176,019
New Bedford, Fairhaven Harbor, Mass.	300,549
Salem Harbor, Mass.	1,699,602
Newport Harbor, R. I.	92,492
Providence River and Harbor, R. I.	8,534,154
Bridgeport Harbor, Conn.	2,518,424
New Haven Harbor, Conn.	8,340,016
New London Harbor, Conn.	1,229,368
Norwalk Harbor, Conn.	719,662
Stamford Harbor, Conn.	790,862
Cold Spring Harbor, N. Y.	505,166
Hempstead Harbor, N. Y.	5,591,657
Huntington Harbor, N. Y.	629,117
Peekskill Harbor, N. Y.	166,379
Plattsburg, N. Y.	565,068
Port Chester Harbor, N. Y.	457,793
Port Jefferson Harbor, N. Y.	1,703,927
Port of Albany, N. Y.	6,782,109
Rondout Harbor, N. Y.	528,037
Tarrytown Harbor, N. Y.	403,925
Camden-Gloucester, N. J.	4,099,024
Trenton Harbor, N. J.	3,303,641
Aliquippa-Rochester, Pa.	5,688,345
Chester, Pa.	880,517
Clairton-Elizabeth, Pa.	8,098,637
Penn Manor, Pa., and vicinity	8,285,320
Pittsburgh, Pa.	6,922,302
Wilmington Harbor, Del.	2,362,672
Cambridge Harbor, Md.	102,578
Washington Harbor, D. C.	3,030,140
Alexandria, Va.	373,189
Port of Hopewell, Va.	759,239
Port of Richmond, Va.	3,378,741
Morehead City Harbor, N. C.	540,416
Port of Wilmington, N. C. (See also Wilmington Harbor, N. C., for waterway data.)	4,820,199
Charleston Harbor, S. C.	5,055,512
Georgetown Harbor, S. C.	962,563
Brunswick Harbor, Ga.	720,721
Savannah Harbor, Ga.	4,558,411
Canaveral Harbor, Fla.	316,111
Charlotte Harbor, Fla.	1,642,968
Fernandina Harbor, Fla.	178,383
Fort Pierce Harbor, Fla.	76,991
Jacksonville Harbor, Fla.	8,671,216
Key West Harbor, Fla.	324,126
Miami Harbor, Fla.	1,181,345
Palm Beach Harbor, Fla.	506,545
Panama City Harbor, Fla.	1,123,472
Pensacola Harbor, Fla.	651,910
Port Everglades Harbor, Fla.	5,244,298
Port St. Joe Harbor, Fla.	1,743,690
St. Petersburg Harbor, Fla.	419,358
Weedon Island, Fla.	312,092
Guntersville, Ala.	1,556,141
Biloxi Harbor, Miss.	162,469
Greenville, Miss.	1,198,891
Gulfport Harbor, Miss.	321,854
Natchez, Miss.	656,180
Pascagoula Harbor, Miss.	2,350,080
Vicksburg, Miss.	1,138,073
Brownsville, Texas	4,325,868
Freeport Harbor, Texas	4,313,016
Galveston, Texas	4,220,634
Harbor Island, Texas	8,114,590
Orange, Texas	1,232,400
Palacios, Texas	219,536
Port Isabel, Texas	369,763
Port Lavaca, Texas	2,079,512
Port Mansfield, Texas	53,332
Sabine Pass Harbor, Texas	172,260
Victoria, Texas	419,754
Helena, Ark.	1,802,162
Chattanooga, Tenn.	1,935,824
Knoxville, Tenn.	757,436
Memphis, Tenn.	6,903,281
Nashville, Tenn.	2,884,348
Kansas City, Mo.	1,878,769
Cincinnati, Ohio	6,727,637
Louisville, Ky.	7,706,210
Mount Vernon, Ind.	4,670,067
Minneapolis, Minn.	569,610
St. Paul, Minn.	3,910,305
Carpinteria, Calif.	701,094
Crescent City Harbor, Calif.	399,093
El Segundo, Calif.	3,949,770
Ellwood, Calif.	64,972
Encina, Calif.	122,407
Gaviota, Santa Barbara County, Calif.	271,476
Humboldt Harbor and Bay, Calif.	583,127
Huntington Beach, Calif.	837,344
Long Beach Harbor, Calif.	9,468,393
Monterey Harbor, Calif.	133,550
Moss Landing Harbor, Calif.	220,438
Oakland Harbor, Calif.	4,001,472
Port Hueneme, Calif.	124,302
Redwood City Harbor, Calif.	3,192,028
San Diego Harbor, Calif.	2,266,986
San Francisco Harbor, Calif.	4,278,454
San Luis Obispo Harbor, Calif.	657,462
Stockton, Calif.	3,064,491
Ventura Harbor, Calif.	1,395,758
Astoria, Ore.	922,673
Coos Bay, Ore.	3,140,252
Oregon Slough (No. Portland Hbr.), Ore.	322,227
Port of Bandom, Ore.	228,834
St. Helens, Ore.	385,497
Yaquina Bay and Harbor, Ore.	292,813
Anacortes Harbor, Wash.	6,382,297
Bellingham Bay and Harbor, Wash.	1,629,513
Everett Harbor, Wash.	2,622,586
Grays Harbor and Chehalis River, Wash.	2,014,771
Hammersley Inlet, Wash. (Shelton Hbr.)	670,535
Longview, Wash.	2,946,330
Neab Bay, Wash.	221,787
Olympia Harbor, Wash.	842,888
Port Angeles Harbor, Wash.	2,110,005
Port Gamble Harbor, Wash.	251,331
Port Townsend Harbor, Wash.	809,076
Seattle Harbor, Wash.	13,933,935
Tacoma Harbor, Wash.	5,429,147
Vancouver, Wash.	1,700,873
Willapa Riv. & Hbr., Naselle Riv., Wash.	457,922
ALASKA, HAWAII, PUERTO RICO	
Anchorage, Alaska	351,963
Hiuliuk Harbor, Alaska	155,093
Juneau Harbor, Alaska	124,277
Ketchikan Harbor, Alaska	1,040,147
Seward Harbor, Alaska	670,037
Sitka Harbor, Alaska	681,356
Skagway Harbor, Alaska	169,767
Whittier Harbor, Alaska	132,427
Wrangell Harbor, Alaska	178,220
Barbers Point, Oahu, Hawaii	469,309
Hilo Harbor, Hawaii, Hawaii	835,165
Honolulu Harbor, Oahu, Hawaii	4,295,155
Kahului Harbor, Maui, Hawaii	714,631
Kaumalapau Harbor, Lanai, Hawaii	278,422
Kaunakakai Harbor, Molokai, Hawaii	322,721
Kawaihae Harbor, Hawaii, Hawaii	126,102
Nawiliwili Harbor, Kauai, Hawaii	410,518
Pearl Harbor, Oahu, Hawaii	2,003,445
Port Allen Harbor, Kauai, Hawaii	155,369
Wake Island Harbor	171,550
Guanica Harbor, P. R.	376,929
Mayaguez Harbor, P. R.	217,754
Ponce Harbor, P. R.	724,354
San Juan Harbor, P. R.	5,646,711
St. Thomas Harbor, V. I.	346,291
Guam Island, Pacific Ocean	99,199

Great Lakes Ports

Calendar Year 1962 (In tons of 2,000 pounds)

Port	Tons	Port	Tons
Duluth-Superior Hbr., Minn. & Wis.	30,298,381	Port Dolomite, Mich.	2,501,914
Silver Bay, Minn.	6,823,180	Port Gypsum, Mich.	194,675
Taconite Harbor, Minn.	8,918,008	Port Huron, Mich.	905,336
Two Harbors (Agate Bay), Minn.	13,016,158	Port Inland, Mich.	3,866,250
Ashland Harbor, Wis.	1,501,913	Port of Detroit, Mich.	27,023,384
Green Bay Harbor, Wis.	2,493,948	Presque Isle Harbor, Mich.	3,980,772
Kewaunee Harbor, Wis.	1,024,524	St. Clair, Mich.	3,266,152
Manitowoc Harbor, Wis.	1,940,332	St. Ignace, Mich.	553,043
Milwaukee Harbor, Wis.	6,724,912	St. Joseph Harbor, Mich.	382,739
Oak Creek, Wis.	2,160,379	Sault Ste. Marie, Mich.	437,997
Port Washington Harbor, Wis.	495,882	Stoneport, Mich.	3,740,791
Racine Harbor, Wis.	131,024	Traverse City Harbor, Mich.	173,309
Sheboygan Harbor, Wis.	499,117	Wells, Mich.	185,301
Two Rivers Harbor, Wis.	163,737	Port of Chicago, Ill.	39,146,795
Alabaster, Mich.	513,165	Waukegan Harbor, Ill.	316,833
Alpena Harbor, Mich.	2,361,655	Burlington, Harbor, Ind.	1,386,456
Calcite, Mich.	12,202,523	Gary Harbor, Ind.	9,045,039
Cheboygan Harbor, Mich.	106,753	Indiana Harbor, Ind.	18,218,337
Detour, Mich.	247,281	Michigan City Harbor, Ind.	128,819
Drummond Island, Mich.	1,427,077	Ashtabula Harbor, Ohio.	9,050,978
Escanaba, Mich.	5,820,604	Cleveland Harbor, Ohio.	16,899,750
Frankfort Harbor, Mich.	1,174,769	Conneaut Harbor, Ohio.	3,063,238
Gladstone Harbor, Mich.	283,936	Fairport Harbor, Ohio.	3,050,751
Gd. Haven Harbor & Gd. River, Mich.	2,790,801	Huron Harbor, Ohio.	1,546,196
Holland Harbor, Mich.	236,277	Lorain Harbor, Ohio.	5,799,726
Lime Island, Mich.	164,110	Marblehead, Ohio.	668,978
Ludington Harbor, Mich.	3,686,435	Sandusky Harbor, Ohio.	4,154,225
Mackinaw City, Mich.	457,193	Toledo Harbor, Ohio.	36,535,893
Manistee Harbor, Mich.	502,637	Erie Harbor, Pa.	2,549,891
Manistique Harbor, Mich.	136,134	Great Sodus Bay Harbor, N. Y.	1,531,319
Marquette Harbor, Mich.	1,063,449	Ogdensburg Harbor, N. Y.	327,560
Marysville, Mich.	139,185	Oswego Harbor, N. Y.	1,026,101
Menominee Harbor, Mich. and Wis.	579,062	Port of Buffalo, N. Y.	15,587,245
Muskegon Harbor, Mich.	3,358,739	Rochester (Charlotte) Harbor, N. Y.	319,942
Petoskey Penn-Dixie Harbor, Mich.	281,550		

Net Total Water-Borne Commerce of the United States

Source: Corps of Engineers, Department of the Army, Calendar Years. In tons of 2,000 pounds.

Type of traffic	1962	1961	Type of traffic	1962	1961
Net total water-borne commerce of the U. S.	1,129,404,375	1,062,155,182	Foreign		
Domestic			Imports	222,689,941	200,165,652
Coastwise	215,460,882	206,899,377	Coastal ports	207,040,920	188,179,228
Lakewise	135,743,781	136,841,146	Gt. Lakes, Canada	14,487,847	11,007,197
Internal	316,061,877	294,052,123	Gt. Lakes, overseas	1,161,174	979,227
Intraport	47,918,437	43,197,871	Exports	135,909,089	129,164,166
Local	54,358,792	50,731,199	Coastal ports	110,492,248	105,959,031
Intraterritory	1,261,576	1,103,648	Gt. Lakes to Canada	20,454,381	18,801,857
Total domestic	770,805,345	732,825,364	Gt. Lakes to overseas	4,942,260	4,403,278
			Total foreign	358,599,030	329,329,818

TON-MILEAGE OF FREIGHT CARRIED ON INLAND WATERWAYS

System	1962	1961
Atlantic coast waterways	29,304,593,000	27,251,444,000
Gulf coast waterways	17,937,896,000	17,765,885,000
Pacific coast waterways	3,362,795,000	5,523,384,000
Mississippi River system, including Ohio River and tributaries	79,304,938,000	72,325,599,000
Other waterways	29,410,000	20,593,000
Great Lakes system. Excludes traffic between foreign ports. Includes Alaskan waterways	60,049,452,000	56,819,421,000
Total	225,089,104,000	209,706,326,000

Vessel Entrances by Customs District in 1963

AMERICAN AND FOREIGN VESSELS WITH CARGO AND IN BALLAST

Source: Bureau of the Census, Foreign Trade Division

Tons shown are net tons of 100 cubic feet carrying capacity of vessels and do not represent the actual weight of cargo carried. Totals represent the sums of unrounded figures, hence may vary slightly from the sums of the rounded amounts.

Customs district	Entrances 1,000 tons	Customs district	Entrances 1,000 tons	Customs district	Entrances 1,000 tons
Grand total	186,700	South Atlantic	9,953	Great Lakes	21,577
		North Carolina	545	St. Lawrence	119
American vessels	33,300	South Carolina	1,865	Rochester	1,781
With cargo	21,013	Georgia	1,292	Buffalo	919
In ballast	12,287	Florida (Atlantic)	6,250	Duluth & Superior	3,027
		Gulf Coast	32,459	Wisconsin	454
		Florida (Gulf)	2,131	Michigan	3,981
Foreign vessels	153,399	Mobile	3,929	Chicago	2,078
With cargo	115,790	New Orleans	12,846	Ohio	9,217
In ballast	37,609	Tennessee	2		
		Sabine	3,724		
		Galveston	8,922	Puerto Rico, Hawaii, Alaska and	
North Atlantic	83,564	Laredo	906		
Me. and N. H.	6,606			Virgin Islands	9,842
Massachusetts	4,706	So. Pacific Coast	17,736		
Rhode Island	643	San Diego	821	Puerto Rico	5,315
Connecticut	1,169	Los Angeles	10,728		
New York	33,960	San Francisco	6,186	Hawaii	2,493
Philadelphia	16,900	North Pacific Coast	11,570		
Maryland	8,719	Oregon	4,303	Alaska	1,213
Virginia	10,860	Washington	7,268	Virgin Islands	$20

APPENDIX C

REPORT OF THE COMMITTEE OF INQUIRY INTO THE MAJOR PORTS OF GREAT BRITAIN (THE ROCHDALE COMMITTEE): SUMMARY OF MAIN CONCLUSIONS

This Report* was published on September 26, 1962. The following is an extract entitled 'Summary of Main Conclusions', consisting of paras. 630-59:

The Adequacy of the Major Ports

630. There is a lack of comprehensive statistical information about the port industry. (Chapter I)

631. A large measure of concentration of port activities has already taken place. Fifteen major ports handle about 70 per cent of Britain's imports and exports and their share of coastal traffic is almost as high. The main changes in the transport of goods by sea since before World War II have occurred in the field of bulk cargoes. There has been a steep decline in coal exports and a large increase in petroleum imports. Competition from air transport has had a significant effect on the proportion of passengers traveling by sea but passenger traffic is not a very important part of the activities of most major ports. (Chapters 2 and 3)

632. The growth of population and industry and changes in their location, the increase of trade with the Continent, which joining the Common Market would intensify, continued growth of the size of ships and the possible further decline of coastal shipping are among the factors which will affect the ports in varying degrees in future years. The construction of a Channel link should not have a great effect on the major ports but the influence of changes in technology could be profound. (Chapter 4)

633. Britain's major ports have benefited considerably from foresight exercised in the past and they have many achievements to their credit since the end of World War II. Nevertheless, there is excessive obsolescent capacity. In the light of forecasts which suggest that Britain's foreign trade might be doubled by 1980 there is a need for a properly planned programme of port development. This must be accompanied by increased efficiency and productivity. Selected existing major ports can be developed to meet most foreseeable national requirements and, except possibly for the requirements of specialized trade, e.g. oil and ore, there is in general no need to develop completely new ports. The major ports to be developed will be found on the main estuaries which already dominate the country's foreign trade. Within these main estuaries there is a need to concentrate ownership and operation of port and related undertakings. (Chapter 5)

*London: H.M.S.O.,Cmnd. 1824, 1962.

Port Control, Organization and Management

634. The operating of ports is a complex business but there are often too many different authorities and employers in port areas. There is scope for combining port authority, conservancy and pilotage functions in single bodies and for reducing the number of employers. In general, cargo handling should be carried out by a small number of large employers, one of whom should be the port authority itself. The possibility of leasing berths to shipowners and stevedoring companies should be explored. (Chapter 6)

635. There should be changes in the constitutions of independent port trusts so as to extend, where necessary, their permitted activities, improve their financial arrangements and revise the size and composition of their Boards. Regular rates and dues payers should not have majority representation. (Chapter 7)

636. There is a fundamental need for the commercial viability of individual ports to be clearly recognized as the overriding condition of their continued existence. The publicly owned ports have achieved a great deal but there are strong arguments in favour of creating a number of new independent port authorities, generally on an estuarial grouping basis, in which the main British Transport docks and certain existing independent ports should be incorporated. Appropriate scheme-making powers should be vested in the Minister of Transport. An inevitable consequence would be the eventual disappearance of the new British Transport Docks Board. (Chapters 7 and 8)

637 There is no lack of enthusiasm among port authorities' principal officers and their staffs but the time has come to review methods of management and recruitment. (Chapter 9)

638. It is most important that Customs procedures should be flexible. (Chapter 10)

639. There is an urgent need for some central machinery to co-ordinate and supervise the execution of plans for the development of the docks and harbours of Great Britain on a national basis. A non-operational National Ports Authority should accordingly be established with statutory powers to control capital investment, to exercise a limited supervision over port charges, to prepare schemes for the amalgamation of port undertakings and to promote port efficiency in general. The Authority should be financed, at least in its early years, out of public funds. (Chapter II)

Finance

640. Ports should be regarded as commercial undertakings. (Chapter 12) The present financial condition of the major ports is generally unsatisfactory and a comprehensive overhaul of their financial and accounting arrangements is needed. (Chapter 13)

641. The present system of statutory control of certain port charges serves no useful purpose and should be abandoned. In its place a limited supervision of charges should be exercised by the National Ports Authority. Port charges do not at present fully cover costs assessed on a commercial basis and should be increased. They are unnecessarily complicated and there is room for a considerable degree of simplification and standardization. There is a wide variation in charges made for similar shipments at different British ports and the main near Continental ports (which are generally less expansive than British ports); the reasons for this should be investigated. (Chapter 14)

642. Capital investment by the major ports since the war has been relatively small; there has been an increase in such expenditure since 1949 but with one or two notable exceptions it has been devoted to minor works; work in hand or programmed follows a similar pattern. (Chapter 15)

643. Government financial assistance for ports would not in general be desirable though there may be cases where Government loans, at normal interest rates, would be justified and a very limited number of cases where entirely exceptional circumstances would justify Government grants. It is not desirable that the Government should undertake the cost of dredging or conservancy work at ports. Ports should be subject to the same taxation and rating arrangements as industry generally and there is no justification for special reliefs; the basis of assessment for rates should, however, be reviewed. (Chapter 16)

644. Port authorities' arrangements for management accounting should be improved. (Chapter 17)

Access, Working Space and Local Planning

645. The seaward approaches to ports must be maintained at a high level of efficiency. Port authorities should seek to reduce the cost of dredging by all possible means. (Chapter 18)

646. In planning for the construction or improvement of docks, quays, sheds, handling facilities and internal transport services, port authorities should take a long-term view of the trend of port and shipping developments. (Chapter 19)

647. The inland transport system is a critical factor in port efficiency. The history of recent years has been dominated by the shift from rail to road transport. Arrangements for the delivery of exports to, and the collection of imports from, the docks must be improved. Road improvement schemes involving the main ports on the major estuaries should be given special consideration on grounds of national importance. (Chapter 20)

648. There should be full co-operation between local planning authorities, port authorities, the responsible Government Departments and the National Port Authority to ensure that the best possible use can be made of sites with port potential. (Chapter 21)

Plant and Equipment

649. A good deal of progress has been made in recent years but there is still room for improvement in the mechanization of general cargo handling. The cost of introducing modern equipment should be more than counter-balanced by its consequential advantages. (Chapter 22)

650. It is vital that British ports should keep abreast of the latest developments in cargo-handling, especially containers. A wide-ranging programme of research and development is needed and a Port Industry Research Association should be established. This association should be financed mainly by a levy on the industry. (Chapter 23)

651. There is a serious lack of facilities for dealing with heavy indivisible loads at some major ports and the problem of providing additional facilities and of meeting their cost should be studied. (Chapter 24)

Port Labour

652. The only practical approach to the solution of the problem of dock labour, is decasualization within the context of the Dock Labour Scheme. The general principles laid down as a basis for decasualization by the National Joint Council for the Port Transport Industry are sound. It must be accompanied by a reduction in the number of port employers, by increased flexibility in the deployment of labour and by greater use of mechanical aids. (Chapters 25-27)

653. Useful progress has been made with the provision of training schemes and emenities for dock workers but further progress is needed. The age structure of the industry should be gradually improved. (Chapter 28)

Important Trades

654. There should be no difficulty in providing adequate terminal facilities for the import of petroleum in the foreseeable future. The industry itself, in co-operation with the port authorities and the National Ports Authority, can be relied on to expand existing terminals and develop new ones in accordance with its own and the country's needs. (Chapter 29)

655. Most British ore ports do not cater economically for the iron and steel industry's import requirements, which are likely to increase in the future. A suitable development programme must be undertaken. Ore terminal development should in the main be financed and undertaken by the steel industry itself. (Chapter 30)

656. The limitations of many major ports prevent large grain-carriers from being used and other difficulties lead to relatively high discharge costs and low discharge speeds. Principal grain ports should be improved

where appropriate to accommodate large grain-carrying ships and the efficiency of grain handling should be increased by the improvement of unloading facilities and by steps to speed the movement of grain through ports' storage facilities. The cost of port improvements carried out for the benefit of the grain trade should be met directly or indirectly by the trade itself. (Chapter 31)

657. The timber trade is important and complex. The seasonal nature of the trade and the difficulties of handling timber present problems which need to be studied. The timber trade itself might assume responsibility for operating timber berths in the main timber ports. (Chapter 32)

658. The volume of coal passing through British ports has decreased greatly in recent decades but it is still an important cargo, especially for some ports. It is important that coal handling machinery should be kept up-to-date at those ports which still have a considerable coal trade. Arrangements might be considered for enabling the National Coal Board to lease and operate berths at coal ports. (Chapter 33)

Reorganization and Development of Ports.

659. Schemes for the amalgamation of port and related undertakings should be implemented in most of the main estuaries of Britain. An early start on suitable schemes for providing additional deep water dry cargo berths is essential. The cost will not be prohibitive and will be spread over several years . Highest priority should be given to development on the Thames and at Southampton. (Chapters 34-44)

The Report is concluded by a SUMMARY OF 141 RECOMMENDATIONS (arranged as paras. 660 and 661) and by 14 appendices.

Thesis
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A historical and critical review of the factors affecting the development of United States ports and their relationship to public policy.